



# Jupiter

## Canvas Software Manual



# Canvas

Multipoint  
Collaborative  
Visualization

**Canvas Version 7.0.2**

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**Jupiter Systems**

31015 Huntwood Avenue  
Hayward, CA 94544-7007  
510-675-1000, option 1 (v)  
info@jupiter.com  
support@jupiter.com  
jupiter.com/support

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# Jupyter

# Chapter 1—Introduction

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## 1. Introduction

### 1.1 Canvas Features

Canvas integrates the sharing capabilities of **Canvas** with **Catalyst** and CRS-5K wall processors.

Canvas enables any source on a traditional display wall—video, data, applications, and more—to be shared with colleagues logged onto their PCs down the hall, across campus, or around the world. With Canvas, sources can be aggregated for sharing when viewing related images is essential for understanding the situation.

Canvas delivers end-to-end collaboration. Users can share sources from anywhere in the network with colleagues at the main display wall, or on PCs and tablets at other locations. Remote clients can be configured as sources and destinations for sharing visual information. And Canvas allows users to annotate directly on all sources including live video streams.

The Canvas software suite extends the capabilities of Jupiter’s Catalyst, CRS-5K, and PixelNet display wall controllers. Canvas also supports VNC sources that can display a desktop provided by a VNC server. Live video, real-time data, application screens, web windows, documents, and presentations can be sent to remote colleagues running Canvas on almost any device.

The CRS-5K extends the collaboration with remote colleagues by connecting non-Canvas PCs or laptops to a Canvas network. The CRS-5K device supports up to four 4K Ultra HD displays or a up to three Pana 21:9 5K displays.

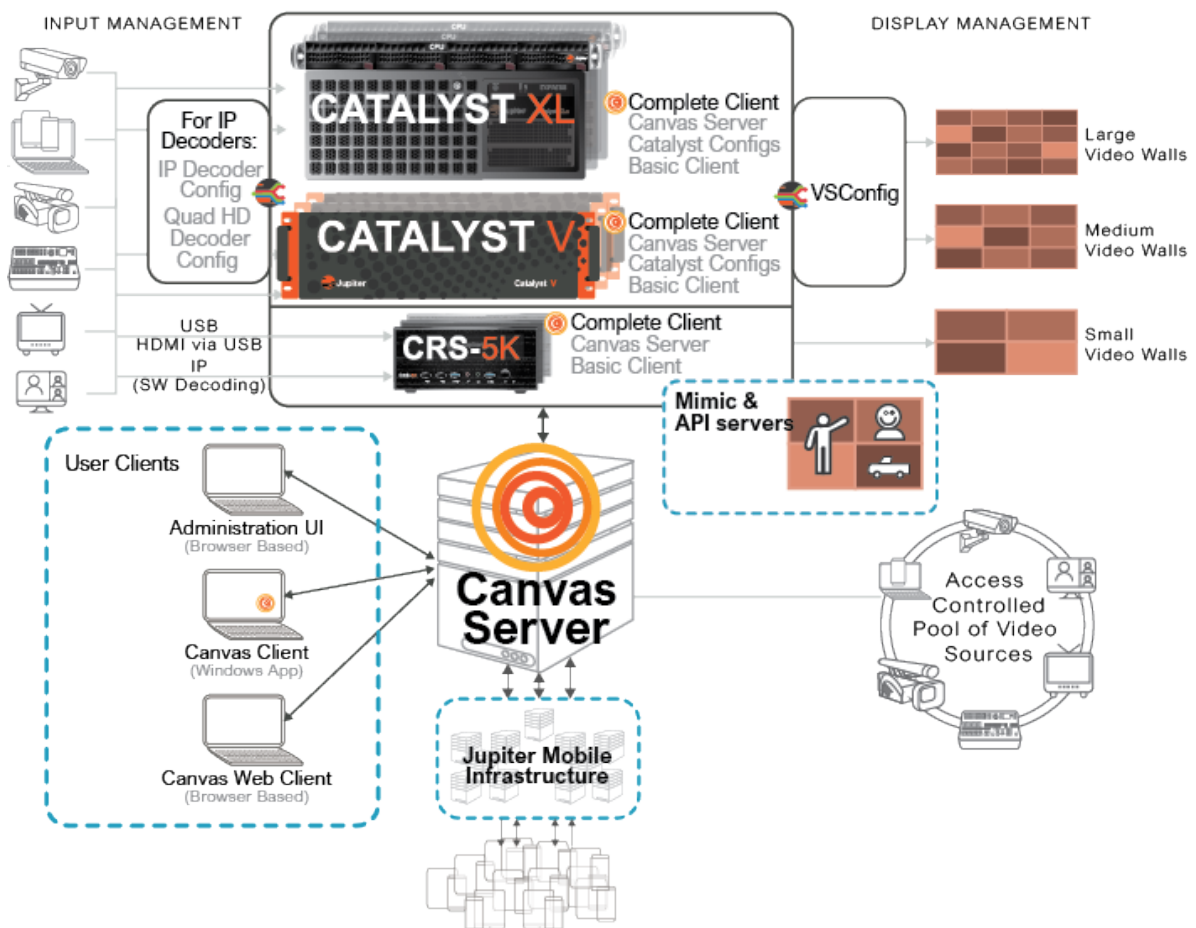
Collaboration centers can work on shared canvases where each canvas represents an independent sharable work area. Users can annotate on screen, coordinate using voice and text chat, share whiteboards, and jointly edit documents, spreadsheets, view and interact with the same canvas object, with each client viewing the canvas in the same proportion

## 1—Introduction

to its overall display area.

Interaction with the canvas varies by user role and permissions. Each user can have different rights and permissions for Sources or Canvases:

- Only a user with **Admin** rights can use the Administration UI to create canvases and sources and to set user access permissions.
- Users with **Edit** rights to a canvas can use the Edit mode in the Canvas PC Client to design and modify the canvas, position windows and select sources.
- Users with **View** rights can view the canvases and sources using the Canvas PC Client, Canvas iOS and Android apps.
- Users with **Annotative** rights can draw, overlay shapes and add text on top of a canvas using the Canvas PC Client.



**Figure 1.1 - Canvas Topology**

## Canvas Source Sharing

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### 1.2 Canvas Source Sharing

- Viewing and collaboration of real-time sources on a control room display wall processor, in a conference room CRS-5K, on any desk with a Canvas PC Client or anywhere at all with a Canvas iOS or Android App.
- Stream HDMI, DisplayPort, SDI, and IP video and desktop sources over the corporate IP network to browsers, Canvas Clients and on Catalyst, CRS-5K, and PixelNet walls.
- Users can share content from their mobile/laptop, by using Canvas CRS-5K either for local-only display or for sharing with other Canvas users. The presenter only needs network access, either through the conference room WiFi or remotely through the LAN.
- Local user database that supports Workgroup or Domain users. User Authentication for object access control with optional Single Sign-On using Active Directory.
- Secure client-server environment with role-based access control and inadvertent disclosure protection
- Unified user experience on Windows desktops and Jupiter Catalyst walls
- Manipulation of sources on a digital "white board" in real-time
- Editing and free-style annotations
- Remote control of desktops via Remote Cursor or Remote Desktop Mimic
- User mail boxes for messaging, invitation and communication
- Built-in text chat

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## 2. Canvas Software Distribution

### 2.1 Canvas Installation USB Flashdrive

The USB Canvas Installation flashdrive includes:

Canvas Installer

### 2.2 System Restore USB Flashdrive for Catalyst Systems

The USB Restore Flashdrive includes the **Windows PE** environment and an image of the system when it was shipped. The README file contains basic instructions for restoring Windows. For details, contact Jupiter Support. The USB Restore drive is placed in the rightmost blank disk carrier when shipped.

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## Chapter 3—Recommended Antivirus

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### 3. Recommended Antivirus

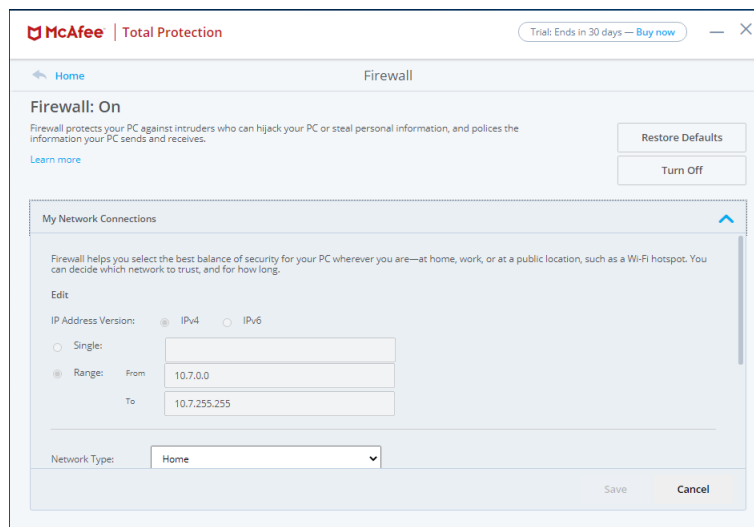
For Canvas to function optimally, we recommend using McAfee and configuring it based on the instruction in this section.

#### 3.1 McAfee

First Install McAfee before Canvas:

##### Settings for Server Machine:

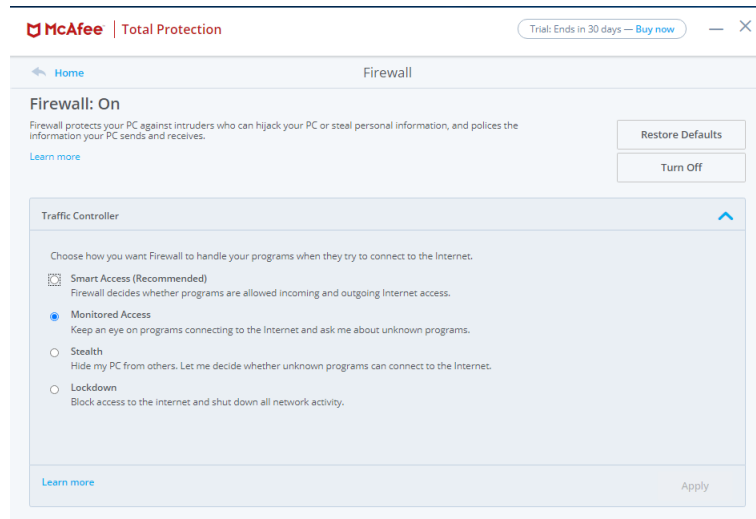
1. Under Firewall > go to My Network Connections > whitelist the range of IP on the network.



**Figure 3.1 - McAfee Whitelist IPs**

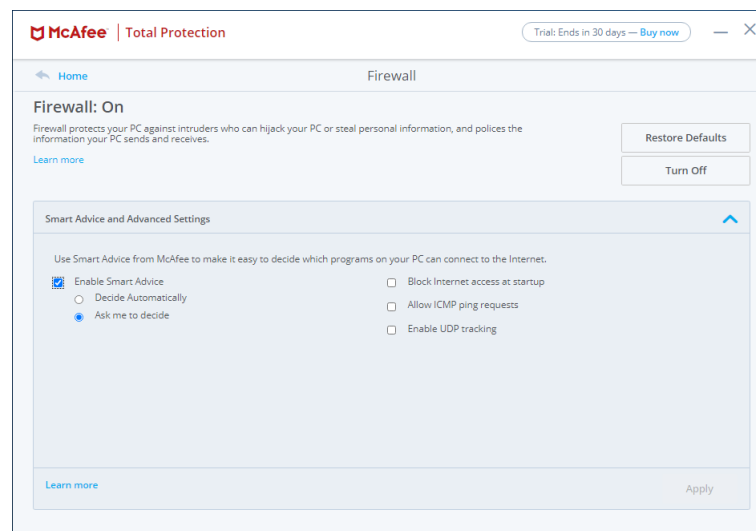
### 3—Recommended Antivirus

#### 2. Under Firewall > Traffic Controller > Choose Monitor Access



**Figure 3.2 - McAfee Monitor Access**

#### 3. Under Firewall > Smart Advice and Advanced Settings > Enable Smart Advice > Select Ask me to decide



**Figure 3.3 - McAfee Monitor Access**

**Note** When a known app in the “Internet Connections for Programs” asks for permission, choose to Allow Always

## McAfee

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### **Settings for Client:**

1. Under Firewall > go to My Network Connections > Add the IP for the Canvas Server's Machine

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**Note**      If McAfee was installed after Canvas, please whitelist the IP before opening Canvas

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# Jupyter

# Chapter 4—Canvas Installation and Setup

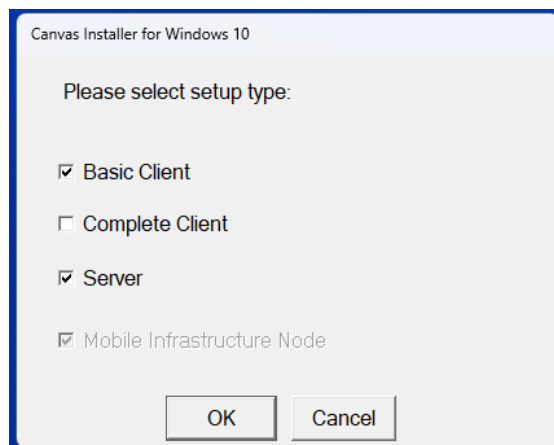
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## 4. Canvas Installation and Setup

### 4.1 Canvas Installer

The Canvas Software installer has four options:

- **Basic Client**  
User clients to access Canvas solution via the Canvas Server
- **Complete Client**  
Specialized Canvas client with applications and drivers to support Mimic interface and video wall processors
- **Server**  
Canvas Server. Provides access to users and shared sources
- **Mobile Infrastructure Node**  
For Jupiter Mobile Server enable mobile clients to access Canvas solution



**Figure 4.1 - Canvas Software Installation Options**

## 4—Canvas Installation and Setup

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With these four options you can install Canvas software components for many scenarios. The goal of this chapter is to explain the two basic Canvas architectures and which option(s) to choose from the installer.

### 4.2 Canvas Architectures

A Canvas solution may only have one Canvas Server. The two basic architectures are defined by where Canvas Server is installed —

- On the video wall processor (VWP) or
- On a server separate from a video wall processor

The Canvas Server which is separate from the video wall processor will be able to support many video wall processors. The Canvas Server which is on a Canvas VWP is not recommended to support other VWP because the Canvas VWPs are purpose built graphics devices for driving video walls, so provide limited scalability for multiple VWPs, shared sources, simultaneous users or mobile devices.

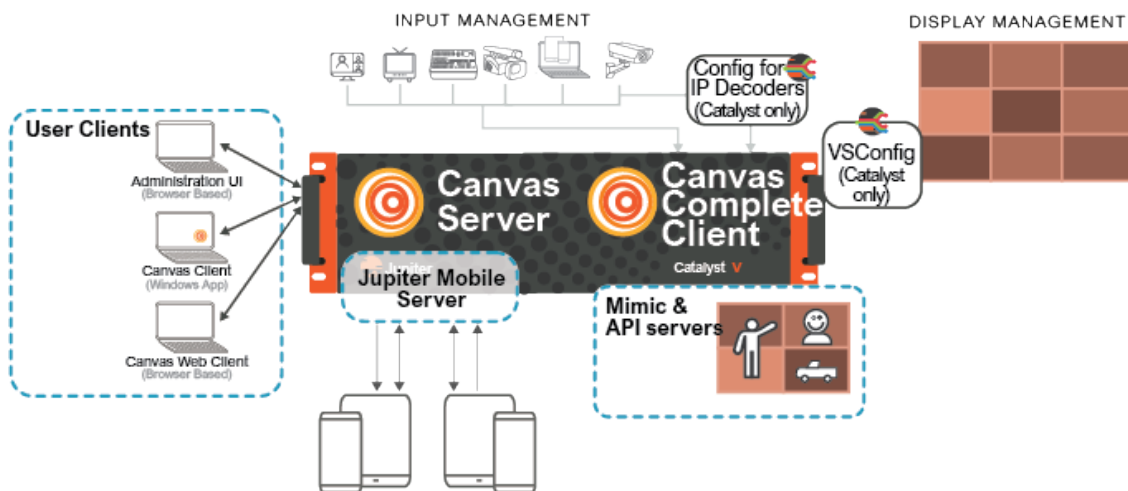


## 4—Canvas Installation and Setup

### 4.2.1 Canvas Server On A Video Wall Processor

Catalyst and CRS-5K Canvas Devices come from the factory with the installer options Complete Client and Server. These options provide

- Complete Client
  - Mimic
  - API Servers
  - Drivers (for Catalyst boards)
  - Configuration Applications (for Catalyst such as VS Config for defining the video wall)
  - User Clients
    - Canvas Client (Windows application)
    - Web Client (Web shortcut)
    - Administration Client (Web shortcut)
- Canvas Server
  - User Access
  - Access Control
  - Jupiter Mobile Server options



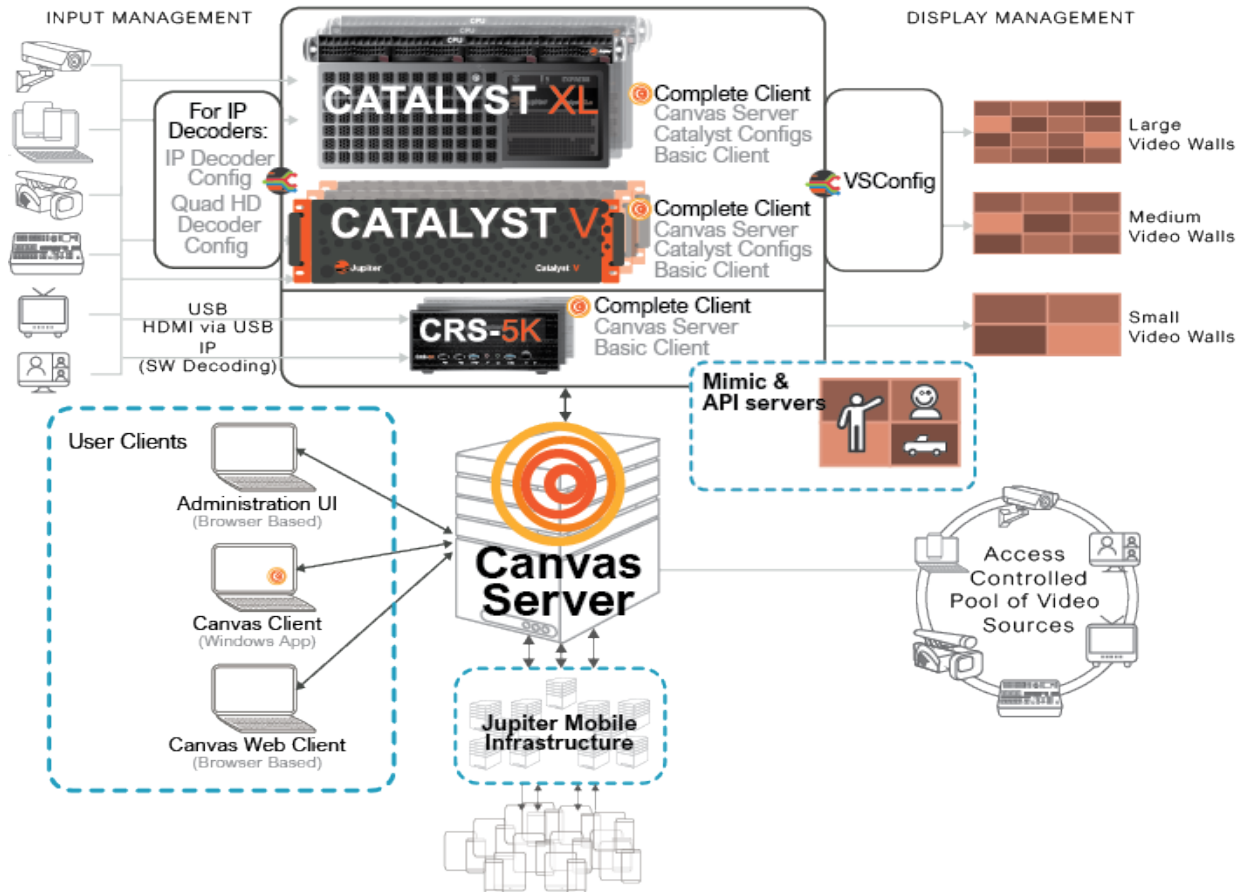
**Figure 4.2 - Catalyst as Standalone VWP with Canvas Server and Jupiter Mobile Server**

These software components are installed at the factory for Canvas video wall processors.

## 4—Canvas Installation and Setup

### 4.2.2 Canvas Server Supporting Multiple VWPs

Canvas Video Wall Processors are purposefully designed for their graphic processing capabilities. For a full Canvas solution which is scalable, the Canvas Server should be installed on a separate server capable device, rather than on the video wall processor.



**Figure 4.3 - Canvas Software Components with Canvas Server Supporting Multiple VWPs**

With this scalable architecture the components are the same as on the VWP, except that the Canvas Server may support multiple video wall processors.

The full Canvas solution for multiple video wall processors would also include full scalability for the Jupiter Mobile Server, which can have Jupiter Mobile Infrastructure components on multiple devices. See [Chapter 9. Jupiter Mobile Server on page 301](#).

## 4—Canvas Installation and Setup

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### 4.2.3 Types of Canvas Installations

The Canvas installer is used for multiple types of Canvas installations (See [Figure 4.1 Canvas Software Installation Options on page 11](#)).

This section describes what each selectable option provides, as well as what software components are installed on the Catalyst or CRS-5K.

- [Section 4.2.3.1 Canvas for Video Wall Processor on page 15](#)
- [Section 4.2.3.2 Canvas User Clients on page 18](#)
- [Section 4.2.3.3 Canvas Server on page 20](#)
- [Section 4.2.3.4 Mobile Infrastructure Node on page 21](#)

See [Table 4. 1 Canvas Software Installer Options and Software Components on page 22](#) for a complete description of what is installed with each option and installation target.

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**Note:** The Canvas Installer installs the selected options and if there are any previous Canvas components REMOVES them, so if you have **Canvas Server** installed already and want to add **Basic Client**, you would need to select **Basic Client** and **Canvas Server**.

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#### 4.2.3.1 Canvas for Video Wall Processor

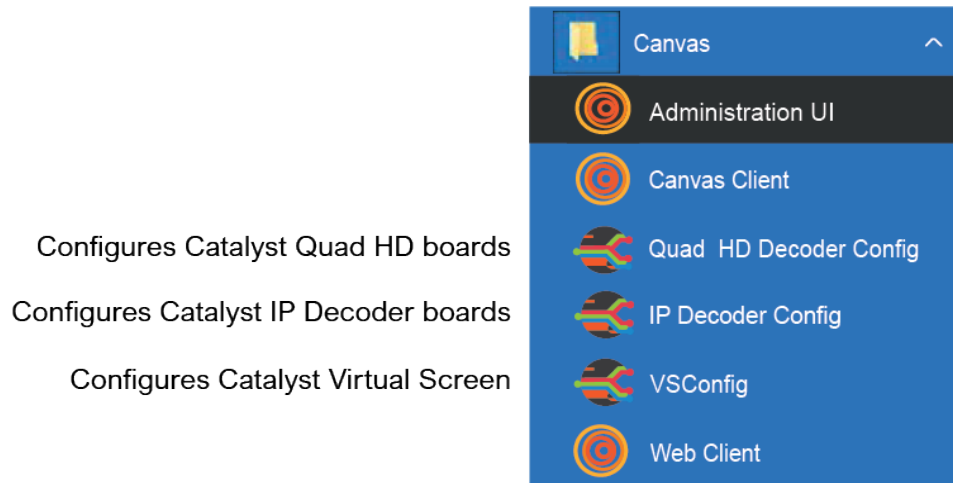
When using the installer for Canvas video wall processors, like Catalyst V, Catalyst XL, and CRS-5K, not all options are selectable. Even through the options are not selectable, the installer shows which components it is installing (**Complete Client** and **Server** are installed on the Catalyst Devices and are shown by an X in the box, but the option is grayed out). **Complete Client** includes **Basic Client**, so **Basic Client** is not selectable.

When installing on a Catalyst system the automatically selected install options are **Complete Client** and **Server**. Additional applications are installed: **VSConfig**, which creates the Mimic Canvas and the Catalyst to display(s) configuration; **IP Decoder Config**, which configures the IP Decoder board; and **Quad HD Decoder Config** which configures the legacy Quad HD Decoder board. For Catalyst systems the applications will appear in the Windows program list.

## 4—Canvas Installation and Setup

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Catalyst and CRS-5K are run by **Complete Client** and it's additional components which include drivers as well as the Mimic and API servers.



**Figure 4.4 - Canvas Software (Catalyst Installation) From Windows Programs List**

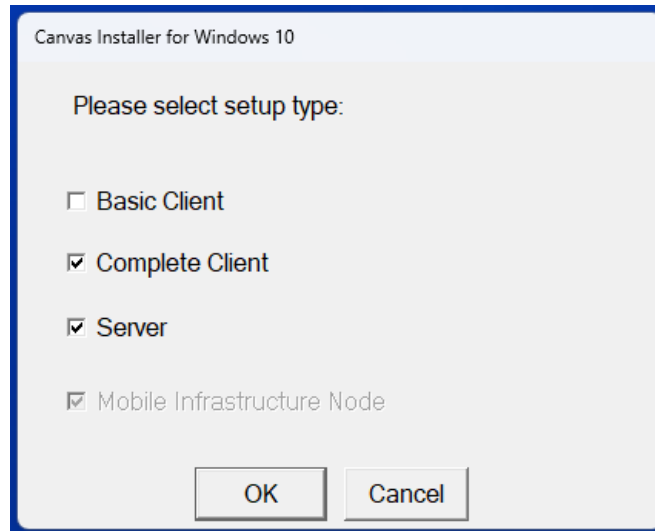
CRS-5K does not need these additional applications, but requires **Complete Client, Server, and Basic Client. Server** is installed so CRS-5K or Catalyst can be used as a standalone device without requiring a Canvas Server separate from the CRS-5K/Catalyst VWP.

If the CRS-5K or a Catalyst video wall processor is part of a larger Canvas Solution, you would not use the Canvas Server installed on these devices. You would normally install the one Canvas Server for the Canvas solution on server hardware.

## 4—Canvas Installation and Setup

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To install Canvas for a Canvas video wall processor select both **Complete Client** and **Server** then click **OK** and follow the installer directions.



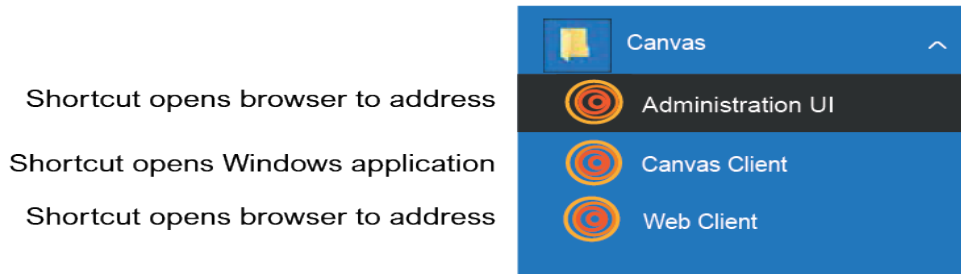
**Figure 4.5 - Canvas Software Installation Option for Video Wall Processor**

## 4—Canvas Installation and Setup

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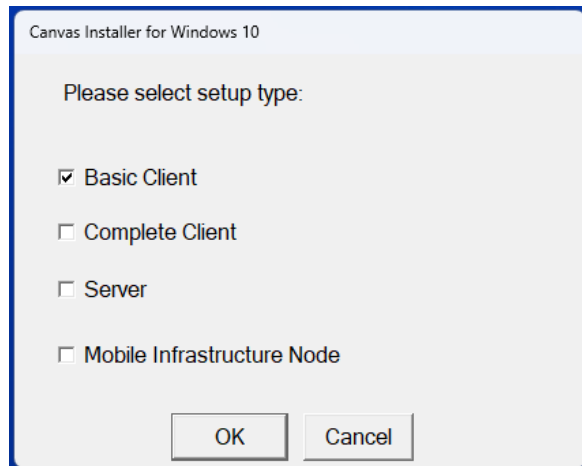
### 4.2.3.2 Canvas User Clients

**Basic Client** installs the **Canvas Client** (a Windows application); Web shortcuts which will also appear in the Windows program list for **Administration UI** and **WEB Client**.



**Figure 4.6 - Basic Client Canvas Software From Windows Programs List**

To install Canvas for a Windows PC/laptop to be used by Canvas Users select **Basic Client** then click **OK** and follow the installer directions.



**Figure 4.7 - Canvas Software Installation Option for Canvas User Clients**

To access the Canvas solution launch **Canvas Client** first and enter the IP address of the Canvas Server then log in. This action binds the clients to the Canvas server. This binding is not just for the Canvas Client, but also for the two browser based clients — **Web Client** and **Administration UI** client. Once the binding has been accomplished when you launch the browser based clients they will also point to and access the Canvas Server.

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### 4.2.3.2.1 Windows Updates

Canvas requires the latest Windows Updates to function properly.

- 1 *Open the Windows 10 **Settings** applet.*
- 2 *Go to **Update & Security**.*
- 3 *Click on **Check for Updates** button.*
- 4 *Install any missing **Critical** and **Security** Windows Updates and restart the system.*

### 4.2.3.2.2 Synchronize Windows Clocks

The system clocks on all Canvas Servers and Clients must be synced within 5 minutes. Click the clock on the Taskbar and then **Change date and time settings** to reset it.

## 4—Canvas Installation and Setup

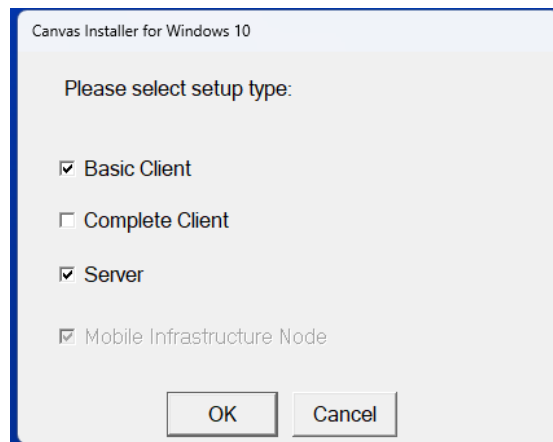
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### 4.2.3.3 Canvas Server

**Server** installs Canvas Server which is required for a Canvas solution. This installer option is meant for installing Canvas Server on a server (a customer owned physical server) which is separate from the video wall processor. This separate server provides has the scaling capacity for a full Canvas system.

Canvas Client, Web Client, and Administration UI are all user clients which access the Canvas Server. In addition, Jupiter Mobile Server or Infrastructure components may be added to a Canvas server or other Windows based servers as needed for mobile server scalability.

While the User Clients are not necessary for the Canvas Server to function, having the user clients on the same device makes operations more convenient, as long as you have a monitor and keyboard. That way you can do all admin or user functions right from the server. For this reason Jupiter recommends installing the **Basic Client** as well as the **Server**. To install Canvas for a Canvas Server separate from a Video Wall Processor select both **Basic Client** and **Server** then click **OK** and follow the installer directions.



**Figure 4.8 - Canvas Software Installation Recommended Option for Canvas Server**



## 4—Canvas Installation and Setup

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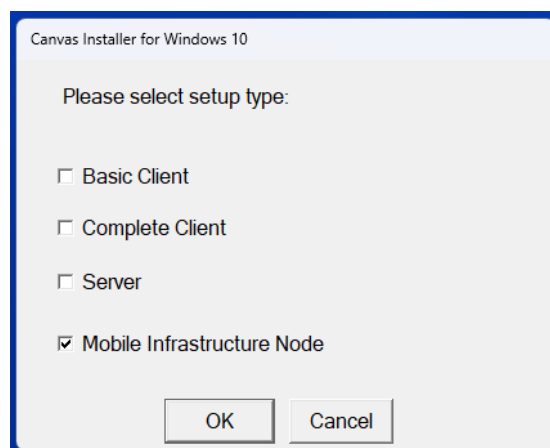
### 4.2.3.4 Mobile Infrastructure Node

Mobile Infrastructure Node installs a non-configured component for the Jupiter Mobile Server. Since it is not yet configured it is called a Mobile Infrastructure Node (MIN). Mobile Infrastructure Nodes may be configured. Once configured the MIN can be configured as an All-In-One Jupiter Mobile Server or may be configured as a component of a distributed scalable infrastructure for the Jupiter Mobile Server. The scalable components are the Load Balancer and Mobile Media Servers and Media Transcoding Servers. See [Chapter 9. Jupiter Mobile Server on page 301](#) for more information about the Jupiter Mobile Server and the options for scalability.

Just as there can be only one Canvas Server for a Canvas solution, there can only be one Jupiter Mobile Server per Canvas solution. If you have configured an All-In-One Jupiter Mobile Server there can only be the one Jupiter Mobile Server component — the All-In-One JMS. The user interface will not allow the configuration of another node, even if multiple MIN have been installed.

If you select the scalable solution, not only can you install multiple of the unconfigured Mobile Infrastructure nodes, but the Administration UI will allow you to configure these installed components according to the rules of the scalable Jupiter Mobile Infrastructure. Each scalable JMS may have one Load Balancer. There may be multiple Mobile Media Servers or Media Transcoding Servers.

To install a Mobile Infrastructure Node, select **Mobile Infrastructure Node** then click **OK** and follow the installer directions.



**Figure 4.9 - Canvas Software Installation Option for Mobile Infrastructure Node**

## 4—Canvas Installation and Setup

**Table 4. 1: Canvas Software Installer Options and Software Components**

Installation Option	Software Components	Description
<b>Basic Client</b>	Canvas Client	Canvas Client application (mini selector with tabs) which provides access to <b>Invitations, Canvases, Walls, Shared Sources</b> . See <a href="#">Section 7 Canvas Client on page 205</a> for more information
	Web Client	Web based Canvas Client (may switch between Administration UI and Web Client)
	Administration UI	Web based client for Administration UI (may switch between Administration UI and Web Client)
<b>Complete Client</b>	Basic Client	See Basic Client above
	Mimic Wall	Canvas Mimic allows the user to manipulate windows on a wall from a Canvas Client on a remote system. See <a href="#">Section 8 Canvas Mimic on page 251</a> for more information
	Hardware Drivers	Drivers for inputs
	Canvas SimpleShare	SimpleShare allows users to share their desktop or application on their desktop on a Mimic Wall. Canvas users or guests can share their entire desktop or a single application using the SimpleShare web interface. See <a href="#">Table 12 Canvas SimpleShare on page 341</a> for more information
	Canvas API Service	The Canvas API Service provides a native Canvas API using a telnet based connection. For the Canvas API Service to work, a Wall/ Mimic Object must be created, and user must log on Canvas Client. See <i>Canvas API Manual</i> for more information
Mimic Protocol Service	The Mimic Proxy Service is a bridge to access the Canvas API from you Customer Application and the Mimic server. See <i>Mimic Protocol Manual</i> for more information	

## 4—Canvas Installation and Setup

**Table 4. 1: Canvas Software Installer Options and Software Components (Continued)**

Installation Option	Software Components	Description
<b>Canvas Server</b>	Web Page Server for Administrator UI & WEB Client	The server for interaction with the Administrator UI and Canvas Web browser clients
	Access Control/Security for all Canvas Objects	Access to all Canvas Objects are controlled via the Canvas Server. These objects include Canvases, Walls and Shared Sources
<b>Mobile Infrastructure Node</b>	Jupiter Mobile Media Infrastructure Node	Installs a Mobile Infrastructure Node which may be configured as <ul style="list-style-type: none"> <li>• Load Balancer</li> <li>• Mobile Media Server</li> <li>• Media Transcoding Server</li> <li>• All-in-One Mobile Server</li> </ul>

### 4.3 Software Distribution

Canvas Video Wall Processors Catalyst V, Catalyst XL, and the CRS-5K) are shipped with

- Canvas Software installed in a Workgroup configuration.
- A Restore UFD (USB Flash Drive)

The USB Restore Flashdrive includes the Windows environment and an image of the system when it was shipped. The README file contains basic instructions for restoring Windows.

For details, contact Jupiter Support.

## 4—Canvas Installation and Setup

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### 4.4 Canvas Server Installation

#### 4.4.1 On Canvas Video Wall Processor

- Canvas Video Wall Processors (Catalyst and CRS-5K) are shipped from the factory with Canvas Software installed in a Workgroup configuration
- A Restore UFD (USB Flash Drive) is provided with an image that includes the Canvas Software installed on the Canvas Video Wall Processor

#### 4.4.2 On Customer Owned Server

- Canvas Software is installed on a Catalyst Processor at the factory when a Canvas Server Appliance or Catalyst Wall Processor is purchased. The following procedures are needed only when installing Canvas Software on a customer-owned PC.
- The latest version of Canvas in an installer is provided on a USB drive
- The system integrator installs Canvas Server on a physical server or a virtual machine server. Virtual machines must be connected to a Domain and the server bound to the final Active Directory with the correct hostname and purchased license. All prerequisites must be installed according to the instructions in this manual
- The Canvas installer automatically detects that non-Jupiter hardware is being used and allows to choose between Basic Client, Complete Client, and/or Server
- The system integrator updates the firmware and software. Install all prerequisites according to the instructions in this manual
- The integrator should create a Restore image after installation is complete

##### 4.4.2.1 Minimum Server System Requirements

**Table 4. 2: Minimum Server System Requirements for Canvas Server**

<b>CPU</b>	Intel® Core™ i7
<b>RAM</b>	32GB
<b>HDD</b>	60GB
<b>Operating System</b>	<ul style="list-style-type: none"> <li>• Windows 10 64-bit Professional Edition</li> <li>• Windows 10 Enterprise LTSC</li> <li>• Windows 10 Enterprise LTSC 2019 or 2021</li> <li>• Optionally, Windows Server 2022</li> </ul>

## 4—Canvas Installation and Setup

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### 4.4.2.2 Recommended Server System Requirements

**Table 4. 3: Recommended Server System Requirements for Canvas Server**

<b>CPU</b>	Intel® Xeon Multi-Core 2.4GHz
<b>RAM</b>	32GB
<b>HDD</b>	60GB
<b>Operating System</b>	<ul style="list-style-type: none"><li>• Windows 10 64-bit Professional Edition</li><li>• Windows 10 Enterprise LTSC</li><li>• Windows 10 Enterprise LTSC 2019 or 2021</li><li>• Optionally, Windows Server 2022</li></ul>

### 4.4.3 Canvas Server Windows Features Installation

This step is only required when installing Canvas Server. The Canvas installation media includes a utility that will install all of the required Windows Features. This utility requires Internet access. Contact Jupiter Support if Internet is not available.

1 *On the Install USB drive go to `Canvas x.x:\Utilities\Server\InstallServerFeatures\`*

2 *Right-click on the file `Enable Server Features.bat` and select **Run as administrator***

A UAC screen may appear if UAC is turned on. Click **Yes**.

3 *On **Enabling Windows Features** click **Yes***

A message will show when the installation is completed. It may take a few minutes to complete.

4 *Reboot the system after the prompt*

## 4—Canvas Installation and Setup

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### 4.5 Canvas User Client Installation

#### 4.5.1 Minimum Requirements

**Table 4. 4: Minimum Requirements for User Client System**

<b>CPU</b>	Intel® Core™ i5
<b>RAM</b>	8GB
<b>Operating System</b>	Windows 10 64-bit Professional Edition

#### 4.5.2 Recommended Requirements

**Table 4. 5: Recommended Requirements for User Client System**

<b>CPU</b>	Intel® Xeon Multi-Core 2.4GHz
<b>RAM</b>	16GB
<b>Operating System</b>	Windows 10 64-bit Professional Edition

## 4—Canvas Installation and Setup

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### 4.6 Mobile Infrastructure Node Installation

#### 4.6.1 Minimum Requirements

**Table 4. 6: Minimum Requirements for Mobile Infrastructure Node System**

<b>CPU</b>	Intel® Core™ i9 10900k or Xeon Silver 4210
<b>RAM</b>	32GB DDR3
<b>HDD</b>	500GB
<b>Operating System</b>	Windows 10 64-bit Professional Edition

#### 4.6.2 Recommended Requirements

**Table 4. 7: Recommended Requirements for Mobile Infrastructure Node System**

<b>CPU</b>	Intel® Xeon Gold 6208U
<b>RAM</b>	32GB DDR3
<b>HDD</b>	500GB
<b>Operating System</b>	Windows 10 64-bit Professional Edition

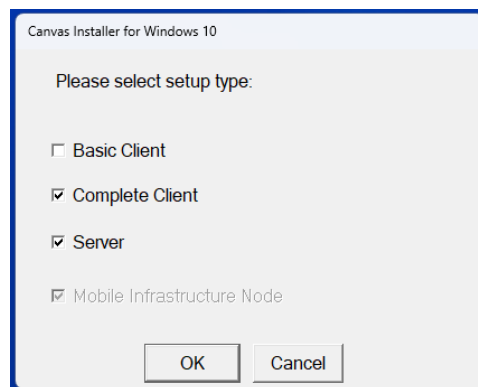
## 4—Canvas Installation and Setup

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### 4.7 Installation Procedure Example

This installation procedure example shows the steps when Complete Client and Server are selected in the Canvas Installer. These two options install Basic Client, Complete Client, Canvas Server and a Mobile Infrastructure Node on the device.

When either Basic Client or Mobile Infrastructure Node are selected, the installer will not follow these steps.



**Figure 4.10 - Complete Client and Server Selected**

1 *Run the Canvas setup file*

The setup file is found at Canvas.x.x\Canvas\setup.exe from the Canvas x.x USB Drive or from downloaded Canvas x.x software.

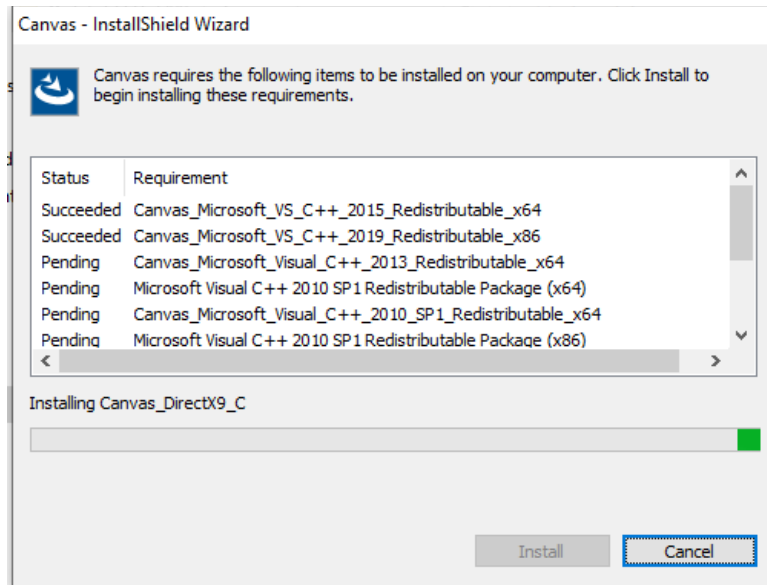
2 *Select **Complete Client** and **Server** and click **OK***

If your system is missing any of the prerequisites, the following dialog will appear with a list of applications to be loaded.



## 4—Canvas Installation and Setup

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**Figure 4.11 - Prerequisites Being Installed**

- 3 Click **Install** and the prerequisite application at the top of the list will begin installing

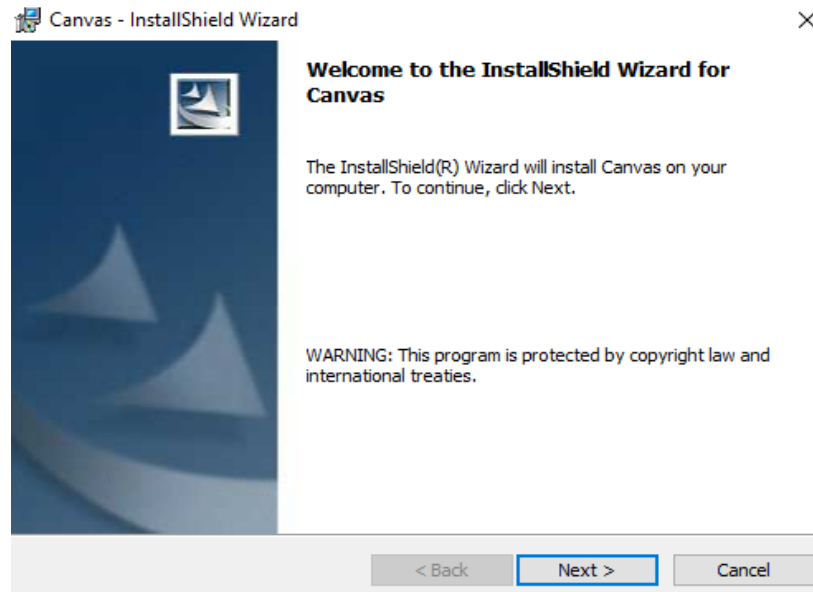
If your system has all the prerequisites, you will be taken to the **Canvas Server Install Wizard** screen. Continue to the next step.

The remaining applications will take a while to install. You will see the following screen as they are installed.

The **Pending Status** dialog will appear during the initial install of these applications.

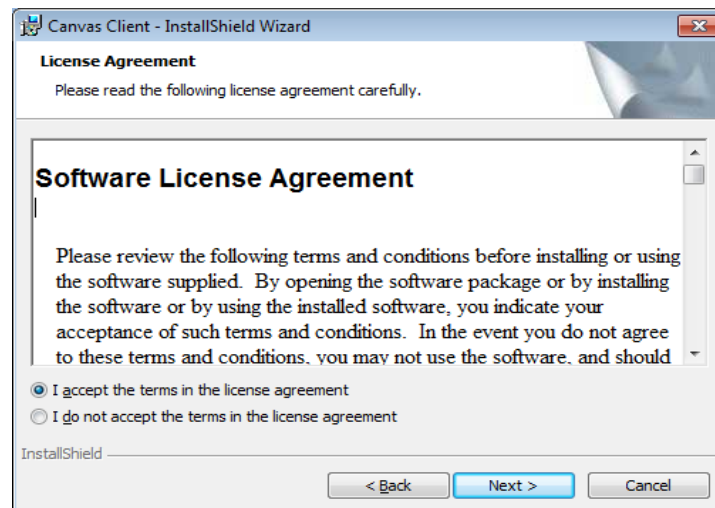
## 4—Canvas Installation and Setup

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**Figure 4.12 - Canvas Installer Welcome Screen**

- 4 On the **Welcome** screen click **Next**

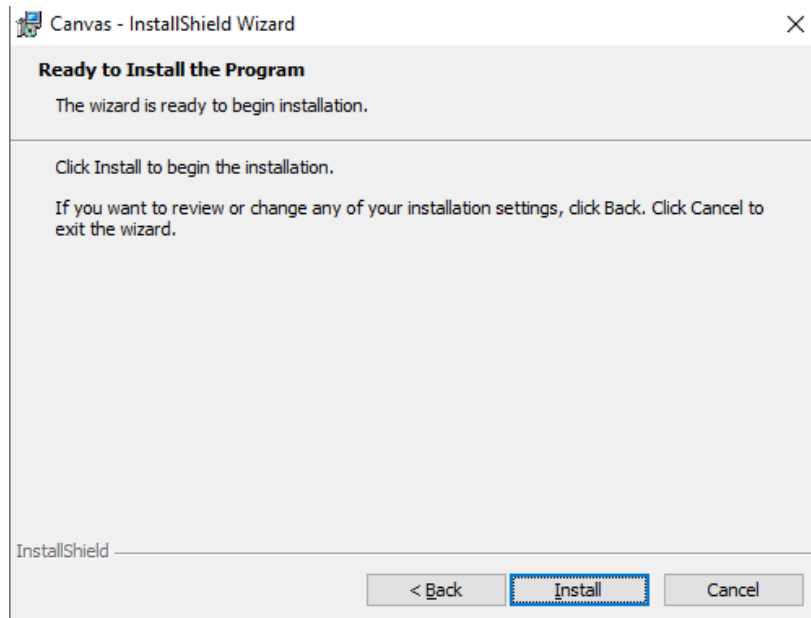


**Figure 4.13 - Software License Agreement**

- 5 Choose the **I accept the terms in the license agreement** option and click **Next**

## 4—Canvas Installation and Setup

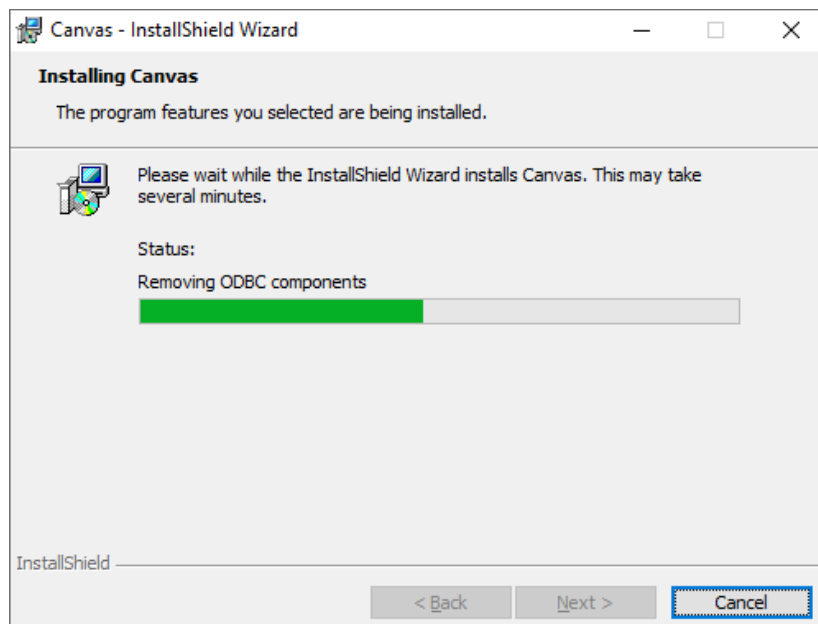
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**Figure 4.14 - Ready To Install**

### 6 *Click Install*

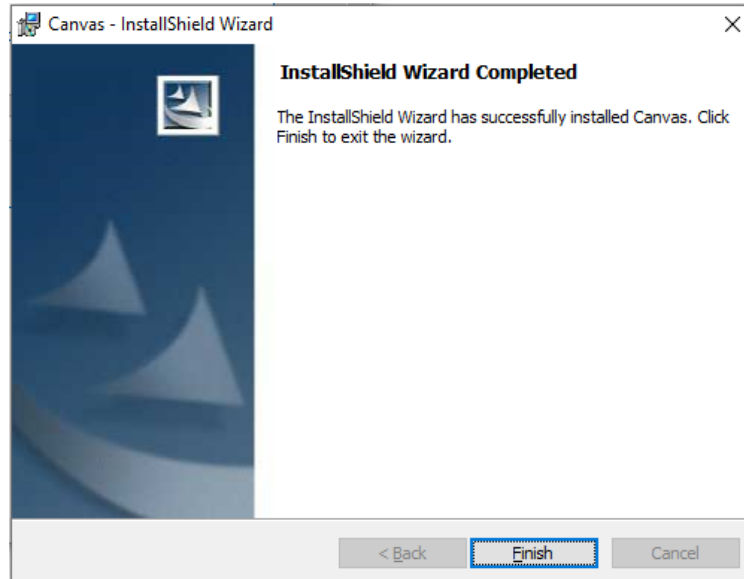
The following screen shows the installation progress



**Figure 4.15 - Installing Status**

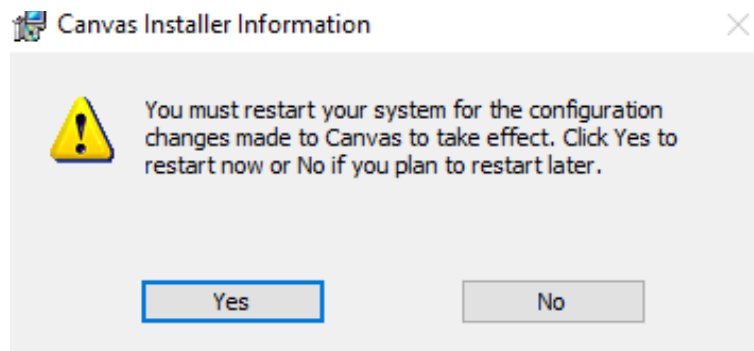
## 4—Canvas Installation and Setup

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**Figure 4.16 - Install Wizard Completed**

7 Click **Finish**



**Figure 4.17 - Reboot Request**

8 On the **Canvas Installer Information** dialog reboot request click **Yes**

## 4—Canvas Installation and Setup

### 4.8 Upgrading Canvas

**CAUTION!** The software version of the Client must match the version on the Canvas Server. Canvas Clients are not supported on a Canvas Server with a different software version.

#### 4.8.1 Upgrade Canvas Versions 6.5 or Later

The Canvas Installer will uninstall the Canvas SW components for versions 6.5 or later. The installer uninstalls all the Canvas SW components and installs only the ones selected. Configuration information is retained

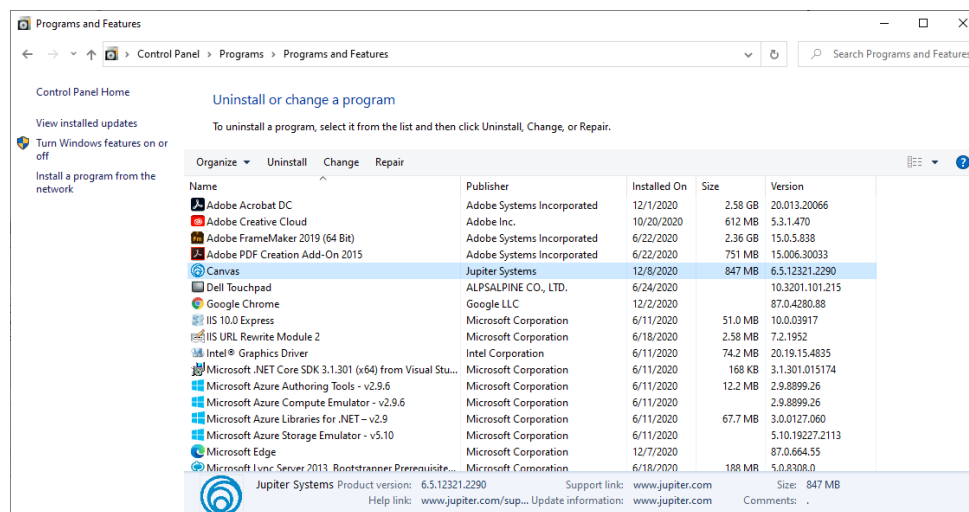
#### 4.8.2 Upgrade Canvas Versions Prior to 6.5

- 1 *Uninstall the Canvas SW on the device*
- 2 *Reboot the system*
- 3 *Install the new version from the Canvas Installer*

#### 4.8.3 Upgrading Complete Client for Canvas VWP

#### 4.8.4 Uninstalling Canvas for Canvas VWP

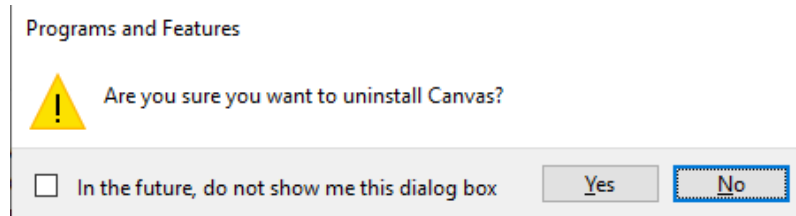
- 1 *Go to **Control Panel|Programs and Features|Canvas***



**Figure 4.18 - Uninstall Canvas Complete Client**

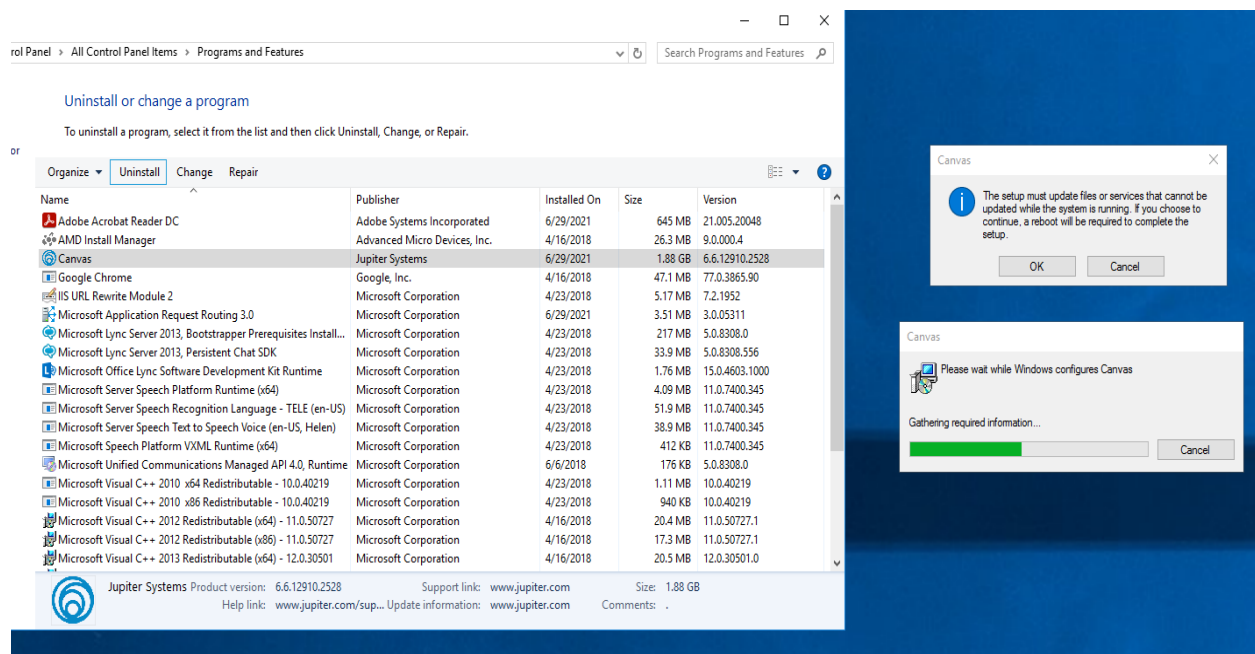
## 4—Canvas Installation and Setup

### 2 Right-click **Canvas** and select **Uninstall**



**Figure 4.19 - Programs and Features Confirm Uninstall**

### 3 From the **Programs and Features** popup click **Yes** to confirm uninstall



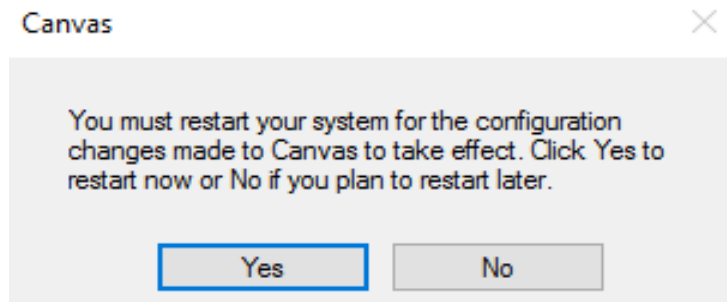
**Figure 4.20 - Setup Update Popup and Status**

### 4 In the **Canvas** popup regarding rebooting to update files or services click **OK**

The wizard will uninstall Canvas from the system.

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**Figure 4.21 - System Reboot**

5 When Canvas is finished uninstalling click **Yes**

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### 4.9 System Recovery

It is recommended that you set up your system for writing debugging information in case of system failure. A system failure sometime means a Blue Screen or system dump. When this happens, a data file is written on the hard drive to help with debugging the problem.

The two screen shots following show you how to enter the setup area and how to setup your system for this process.

We suggest that you configure for a full kernel dump but in cases where you may not be able to transmit a large multi-megabyte file it is at least helpful to have the mini-dump, which is only 65 K bytes.

Right click **My Computer** and then click **Properties** at the bottom of the menu. Select the **Advanced** tab then click the **Settings** button in the **Startup and Recovery** section.

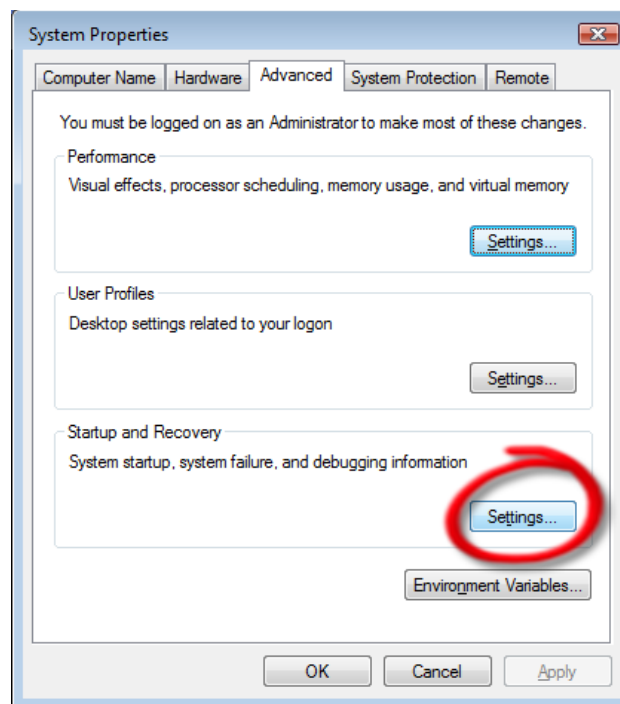
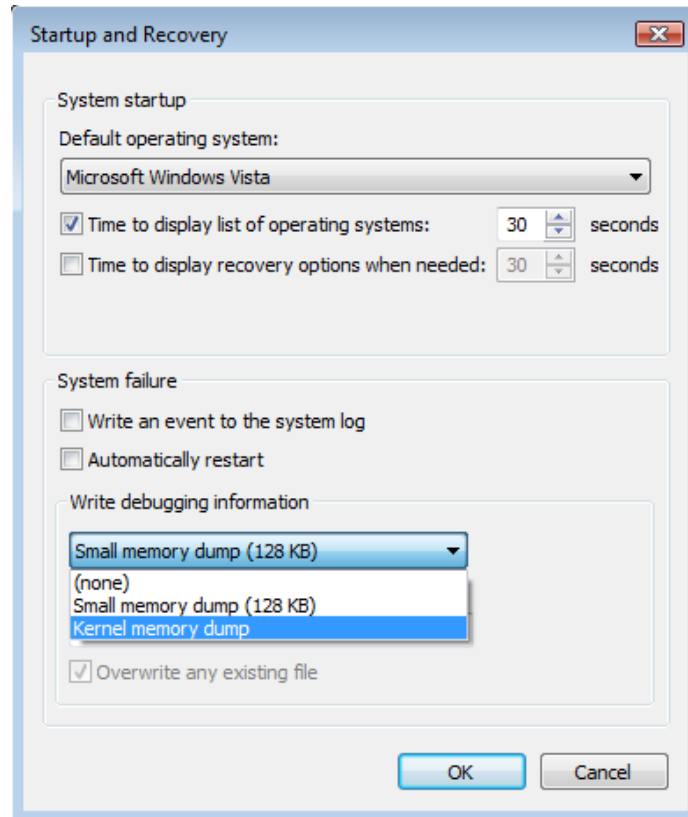


Figure 4.22 - System Properties|Advanced



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**Figure 4.23 - Startup and Recovery**

When you click the **Settings** button you will be presented with the **Startup and Recovery** dialog. Both items under System Failure should be unchecked as shown.

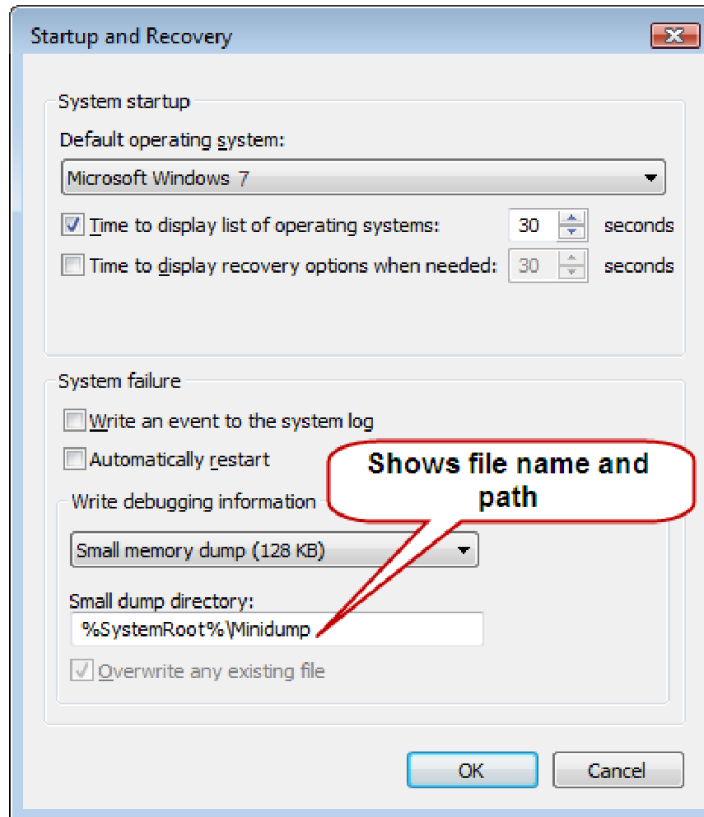
Click the drop-down box to reveal the options:

- **(none)**
- **Small Memory Dump**
- **Kernel Memory Dump**

Jupiter Systems recommends the **Small Memory Dump** option.

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**Figure 4.24 - Startup and Recovery**

The file name and path are shown in the **Small dump directory** text box. You can change this location. It is best to leave it as is and find it by default in the root directory of the C: drive.

---

**NOTE:** Jupiter recommends using a monitor with the same resolution as the wall displays connected to Ch.1 for configuring your Wall Controller for the first time. The Wall Controller has been configured at the factory for a single display and a resolution of 1920X1080P at a 60 Hz refresh rate.

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**NOTE:** When troubleshooting a large wall, set the wall size to 1x1 and connect a local monitor (e.g., a desktop monitor) to output port #1. When done, set the wall back to its normal array geometry and reboot. While the system is rebooting, re-connect the normal wall monitor to output port #1.

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## 4—Canvas Installation and Setup

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### 4.10 Networking and Security

Canvas is an enterprise software product that can use both Windows Active Directory Authentication and Canvas User Accounts. Workgroups use only Canvas User Accounts.

#### 4.10.1 Canvas Server on Physical Servers vs. Virtual Machines

- Physical Server: Workgroup or a Domain
- Virtual Machines: Domains only.

#### 4.10.2 Security Privileges

- Canvas software installation - Local Machine Administrator
- Domain installation - Domain Network Administrator
- License Authorization - Local Machine Administrator

A domain user must remain logged into the Canvas Server on a domain. Once installed and configured, the Canvas Client software can run in a standard user account.

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### 4.11 Network Topologies

Canvas supports network Workgroups as well as Domains. This makes it easier to bind to a Canvas Server from a remote site to view other sources.

#### 4.11.1 Workgroups

Canvas operates in a Windows **Workgroup**.

In a workgroup:

- All computers are peers; no computer has control over another computer.
- Each computer has a set of user accounts. To log on to any computer in the workgroup, you must have an account on that computer.

#### 4.11.2 Domains

Canvas operates in a Windows **Domain** environment.

In a domain:

- Network administrators use servers to control the security and permissions for all computers on the domain. This makes it easy to make changes because the changes are automatically made to all computers.
- There can be thousands of computers in a domain.
- The computers can be on different local networks

**Root domain:** The root domain, the first domain that you create, contains the configuration and schema for the forest. Additional domains are added to the root domain to form the tree structure or the forest structure, depending on the domain name requirements.

**Tree:** A tree is a cohesive group of domains, known as subdomains or child domains, that grow from a root domain. All the domains within a tree share a contiguous namespace.

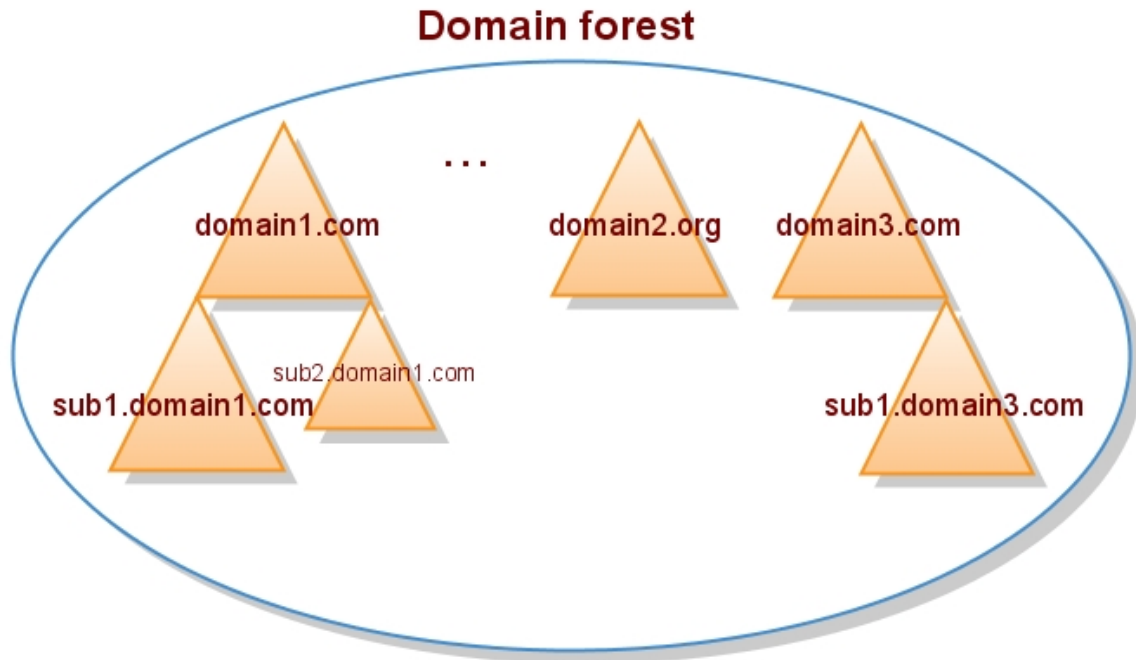
**Child domain:** A domain located in the namespace tree directly under another domain name (the parent domain), which contains the name of the parent in its own name.

Example: **sales.company.net** is a child domain of the **company.net** parent domain.

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**Forest:** Two or more domain trees which do not share a contiguous namespace can be joined in a forest.



**Figure 4.25 - Domain Forest**

### 4.11.2.1 Domain Use in the Administration UI

- Canvas allows domain groups to be added to roles. Upon user login, the Canvas Server must discover the use777r group membership across the whole domain forest in order to map the user to roles.
- When entering accounts, the account is either selected from a search list or manually entered in the user@domain format.
- The server validates the entry against the Active Directory and either accepts or rejects the entry.

### 4.11.3 Verifying the Computer Workgroup or Domain

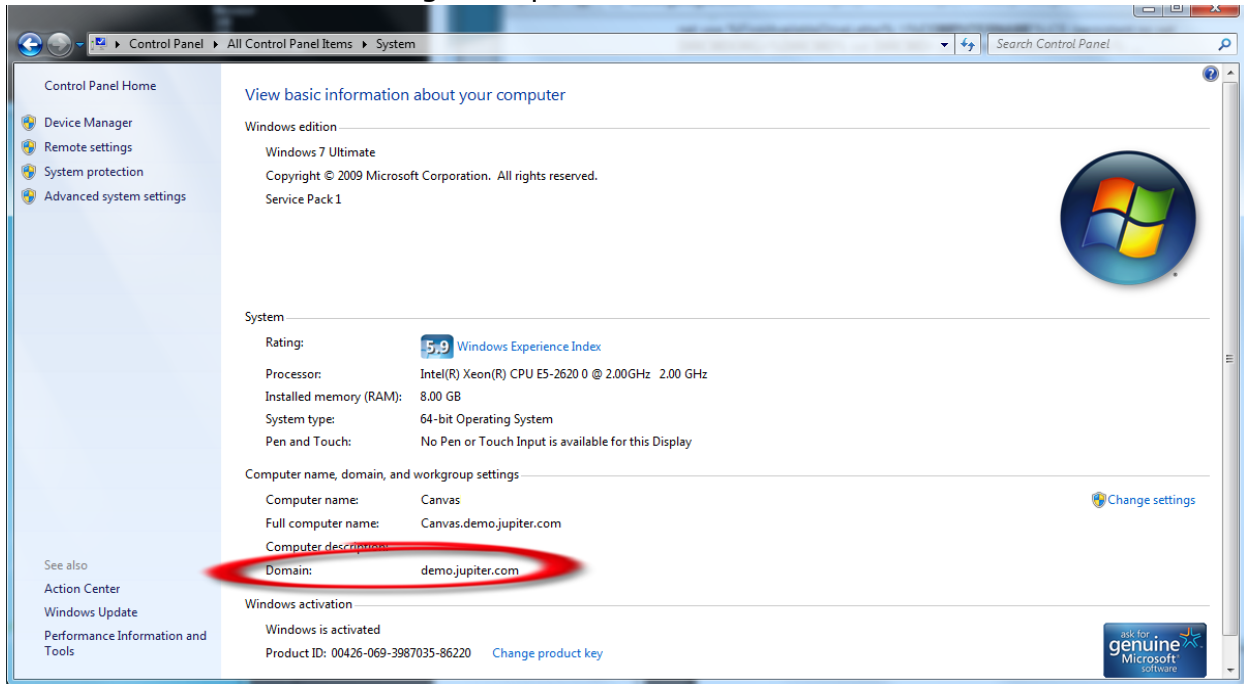
If the Canvas Server is in a Workgroup, the installer must have full Administrator privileges on the Canvas Server.

If the Canvas Server is on a domain, the installer must have full Administrator privileges on the Canvas Server and the domain network. To verify the network type:

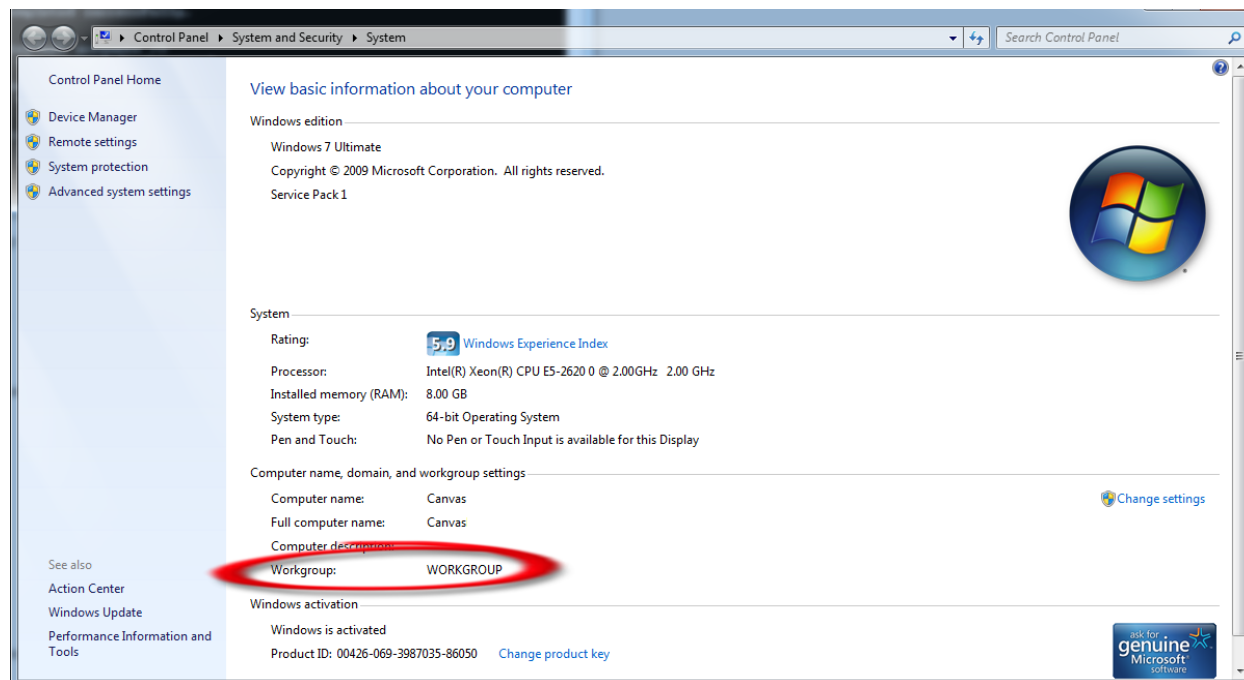
1. Go to **ControlPanel—>System and Security—>System**

## 4—Canvas Installation and Setup

2. Check if the **Workgroup** or **Domain** name is listed as shown in the following example:



**Figure 4.26 - System Information—Domain Name**



**Figure 4.27 - System Information—Workgroup Name**

## 4—Canvas Installation and Setup

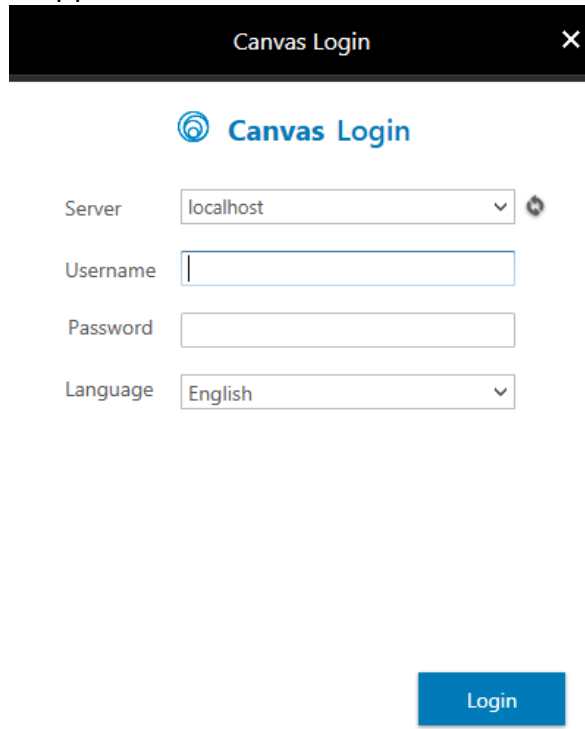
---

### 4.12 Binding a Canvas Client to a Server

#### 4.12.1 Initial Login

A **Canvas Client** must have a link to one specific **Canvas Server** at a time. The steps below describe how to **BIND** a **Canvas Client** to a **Server** when logging in for the first time.

1. When the **Canvas Client** is started the first time, the Canvas Login screen will appear:



**Figure 4.28 - Canvas Login**

2. Click on the **Language** drop down and select the desired language.
3. Click on the **Server** drop down list, select the **Canvas Server** associated with this Client and click **OK**.

If no Servers are shown, type in the **Full Computer Name** of the server.

If the error "Authentication Server is down" appears, the Canvas server is down or unreachable.

4. Enter your **Username** and **Password** and click **Login**.

## 4—Canvas Installation and Setup

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5. Now the Canvas Client is ready to be used. It will connect to the selected Canvas Server automatically the next time it is started. The selected server is saved in the system for the **Canvas Client** and the **Administration UI**.

### 4.12.2 Changing Canvas Server Login

To change to another Canvas Server, logout from the Canvas Client by clicking on the Client login icon and Log back in.



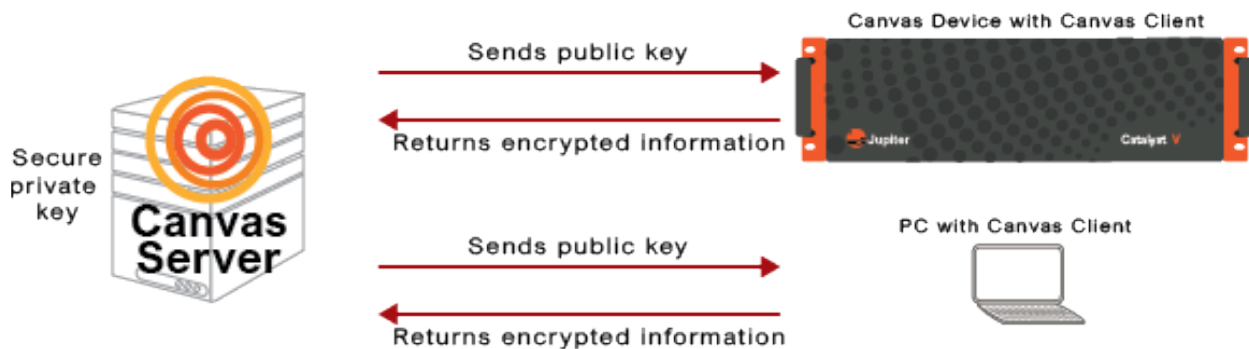


## 4—Canvas Installation and Setup

### 4.13 HTTPS Security

This section will cover the security configuration between the Canvas Server and Canvas Clients. The security configuration uses HTTPS to encrypt the data communication. In order for HTTPS to securely encrypt data, the Default Web Site must be bound to a certificate issued by a CA (certificate authority). We will use Microsoft’s Internet Information Services (IIS) Management to create the request for the certificate and to install the certificate once it is returned by the CA. Default Web Site is the name of the Web site for the server given by IIS.

In this process we will create or acquire the private and public keys for SSL encryption/decryption.



**Figure 4.29 - Public Keys Share Encryption Information. Private Keys Are For Decrypting Responses**

When a request is made to the server with the private key, it sends a public key to initiate the secure transaction and prove ownership of the data. Private keys are kept private. In our scenario the private key is on the Canvas Server. The Canvas Server will share a public key. Public keys are part of receive transactions, to verify authority and are shared. The Canvas Server shares the public key with the correspondent and they use it to know how to encrypt the data. The data can only be decrypted by Canvas Server with its private key, so the Canvas Server will be the only one which can read the responding information.

The Canvas Server administrator will generally obtain the digital certificate from one of the certificate authorities that issue digital encryption certificates. Examples are Symantec (formerly Verisign), Comodo, goDaddy, GlobalSign, DigiCert, etc.

The directions in these procedures describe the certificate request and installation process with DigiCert; other certificate authorities use similar steps, though the actual UI labels may be different.

## 4—Canvas Installation and Setup

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### 4.13.1 Digital Certificate

A Certificate Authority (CA) is a trusted 3rd party – trusted by both the owner of the certificate and by the party relying on the certificate. Keys in the certificate are combined with the SSL keys in the IIS software to ensure secure encryption of the web pages.

To get a certificate you create a Certificate Signing Request (CSR) which you use to send the configuration information specific to your server when you request a certificate from a CA. See [Section 4.13.2 Request a Certificate from a Certificate Authority on page 46](#) for a detailed procedure.

[Section 4.13.4 Install Certificate on page 54](#) describes how to install the certificate.

### 4.13.2 Request a Certificate from a Certificate Authority

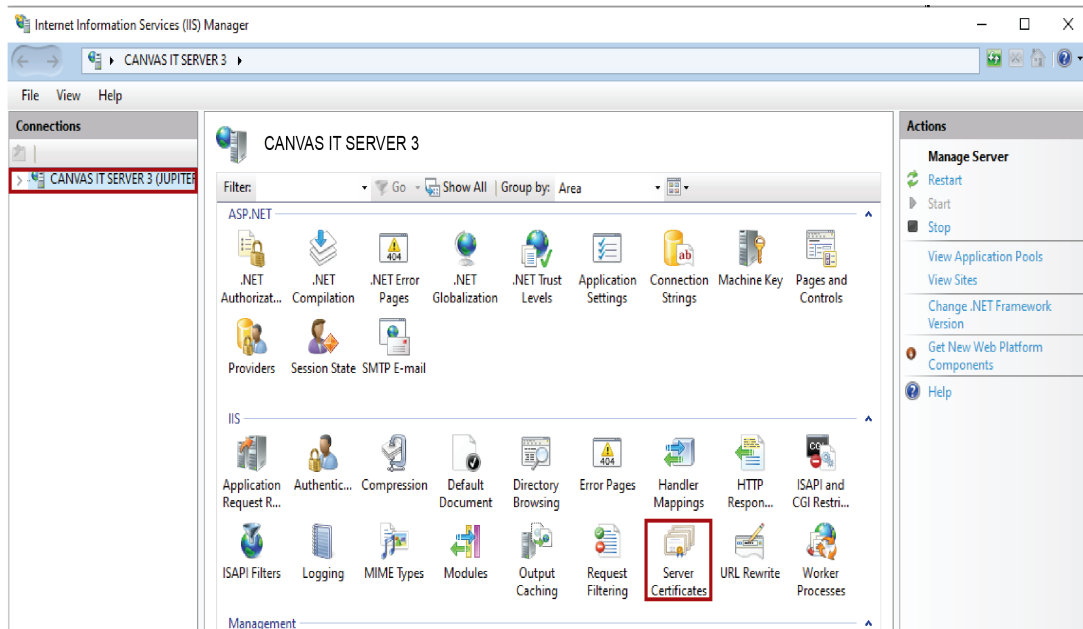
In this procedure we are adding HTTPS to the Canvas server software which is installed on a host with the name CANVAS IT SERVER 3. The host name is the name given to the computer.

Using IIS we will create the block of encoded text which is given to a Certificate Authority (CA) to apply for a Secure Socket Layer (SSL) Certificate.

#### **Create a CSR**

The private key is created in this part of the process as you, the certificate owner, create the private key when you generate a CSR in IIS. In the next section after creating the CSR in IIS, we'll describe how to export the private key in a .pfx file, so you can save it as a backup.

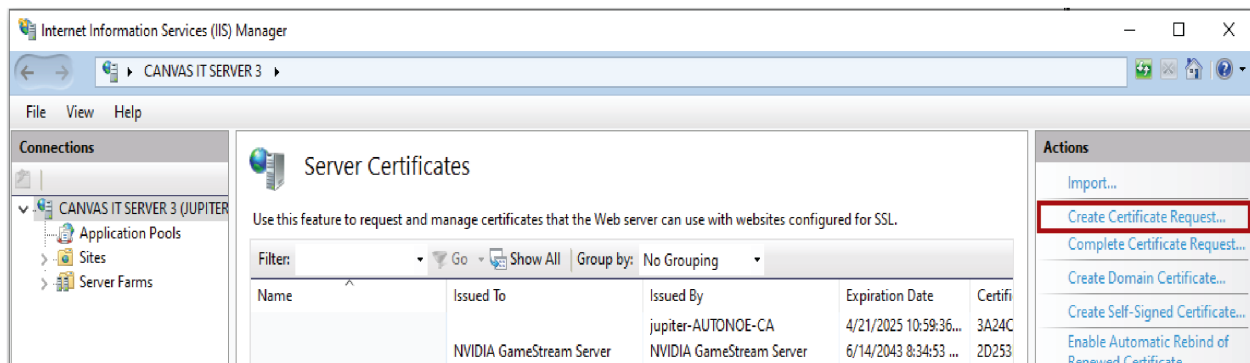
## 4—Canvas Installation and Setup



**Figure 4.30 - IIS Connections and Server Certificate**

- 1 In IIS select **CANVAS IT SERVER 3** from the **Connections** pane menu
- 2 Double-click **Server Certificates** from the **CANVAS IT SERVER 3** Home pane

The **Server Certificates** pane opens.



**Figure 4.31 - IIS Create Certificate Request**


- 3 In the right side **Actions** pane click **Create Certificate Request**

The **Distinguished Name Properties** page of the **Request Certificate** wizard opens.

## 4—Canvas Installation and Setup

### 4 Enter the appropriate information in the **Distinguished Name Properties** page, then click **Next**

Request Certificate ? X



**Distinguished Name Properties**

Specify the required information for the certificate. State/province and City/locality must be specified as official names and they cannot contain abbreviations.

Common name:

Organization:

Organizational unit:

City/locality:

State/province:

Country/region:

**Figure 4.32 - Distinguished Name Properties**

**Table 4. 8: Distinguished Name Properties**

UI Element	Description
<b>Common name</b>	The fully-qualified domain name in the format of hostname.domain.TLD, for example, your Common name should be something like YourCompanyDomain-Name.com. Research FQDN for more information
<b>Organization</b>	Your company's legally registered name, for example YourCompany, Inc
<b>Organizational unit</b>	The name of the department, usually this would be "IT" or left blank
<b>City/locality</b>	The city or locality where the organization is legally located
<b>State/province</b>	The state or province where the organization is legally located
<b>Country/region</b>	The country or region where the organization is legally located

## 4—Canvas Installation and Setup

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- 5 In the **Cryptographic Service Provider Properties** page select the provider and set the bit length of the cryptographic key



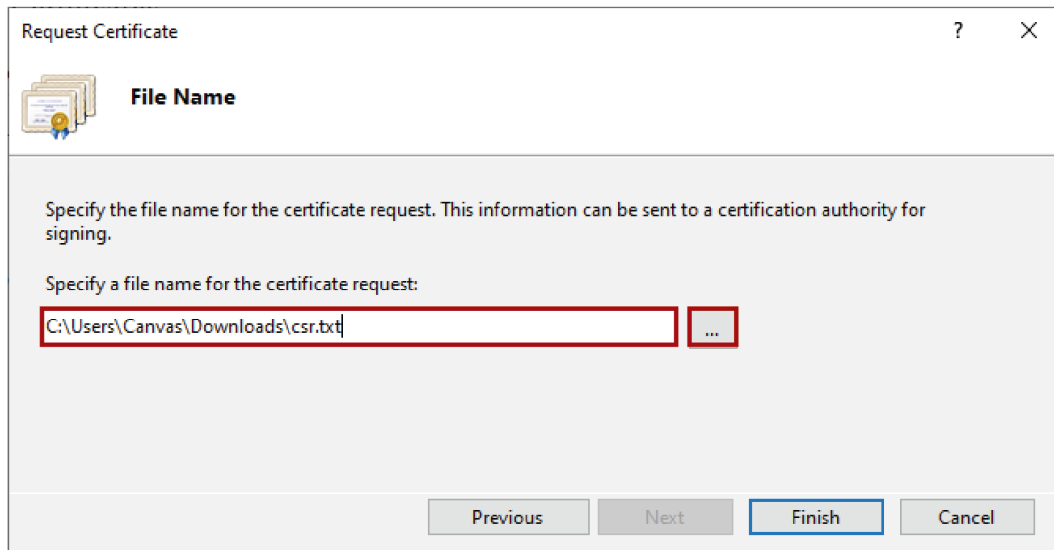
**Figure 4.33 - Cryptographic Service Provider Properties**

- a From the **Cryptographic service provider** dropdown select **Microsoft RSA SChannel Cryptographic Provider**
- b From the **Bit length** dropdown select **2048**  
2048 would be the normal bit length. Select a different length if there is a specific reason to do so.
- c Click **Next**

## 4—Canvas Installation and Setup

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- 6 In the **File Name** page in the text box under **Specify a file name for the certificate request**, click the ... box to browse to a location where you want to save your CSR, then click **Finish**



**Figure 4.34 - Cryptographic Service Provider Properties**

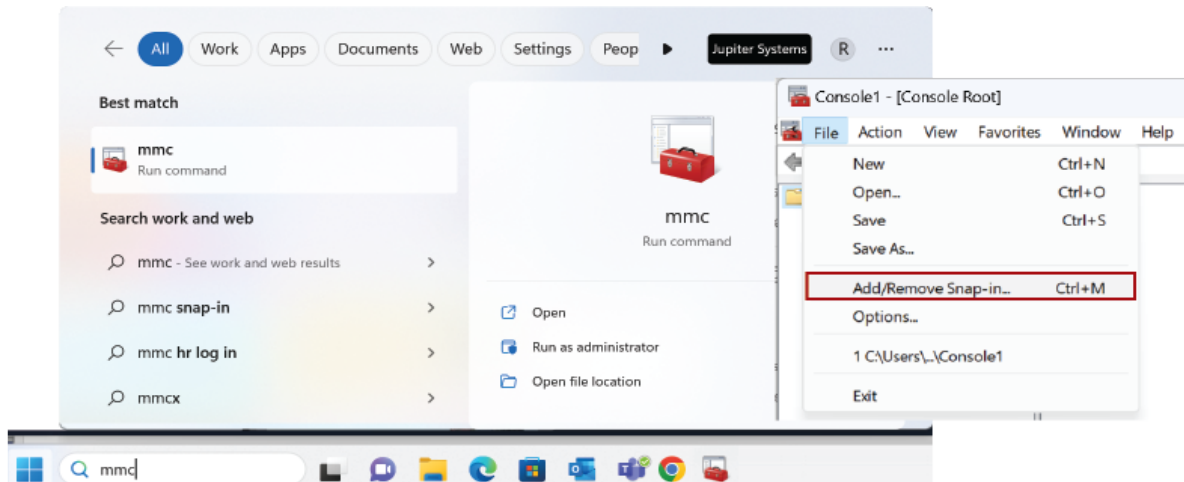
- 7 Click **Finish**
- 8 With a text editor open the created text file which uses the name you provided and location given in the **File Name** page
  - a With a text editor open the created text file which uses the name you provided and location given in the File Name page
  - b Copy out the text including the -----BEGIN NEW CERTIFICATE REQUEST----- and -----END NEW CERTIFICATE REQUEST----- tags, and paste it into the certification authority's online order form
  - c Click **Buy Now** (or appropriate button depending on the certification authority's form)
- 9 After you receive your certificate from your certification authority, install it following the directions in [Section 4.13.4 Install Certificate on page 54](#)

## 4—Canvas Installation and Setup

### 4.13.3 How to Extract Private Key From CSR

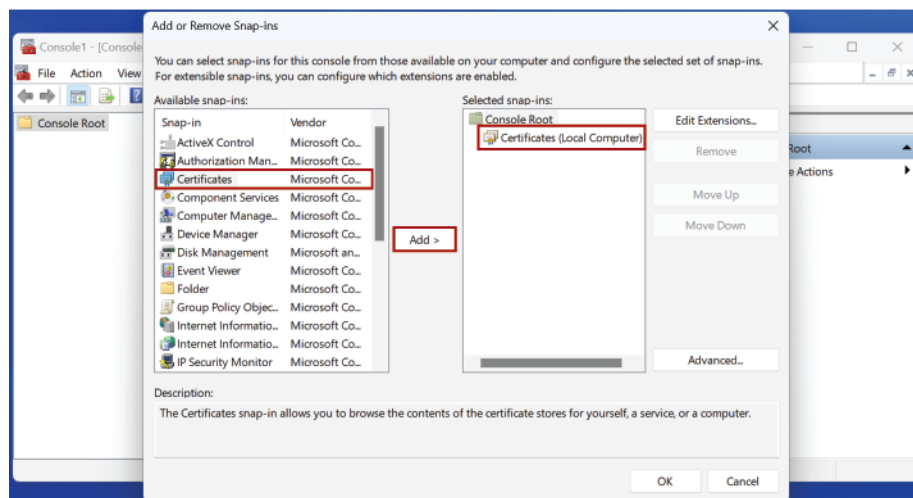
Private keys should be kept in a secure location and only accessible by a limited amount of staff members. This procedure is provided so you can back up your private key.

- 1 Use **Microsoft Management Console** to access certificate



**Figure 4.35 - Run Microsoft Management Console and Add Snap-in**

- a Enter **mmc** in Windows Start Menu
- b From the **File** menu of the MMC select **Add/Remove Snap-in**



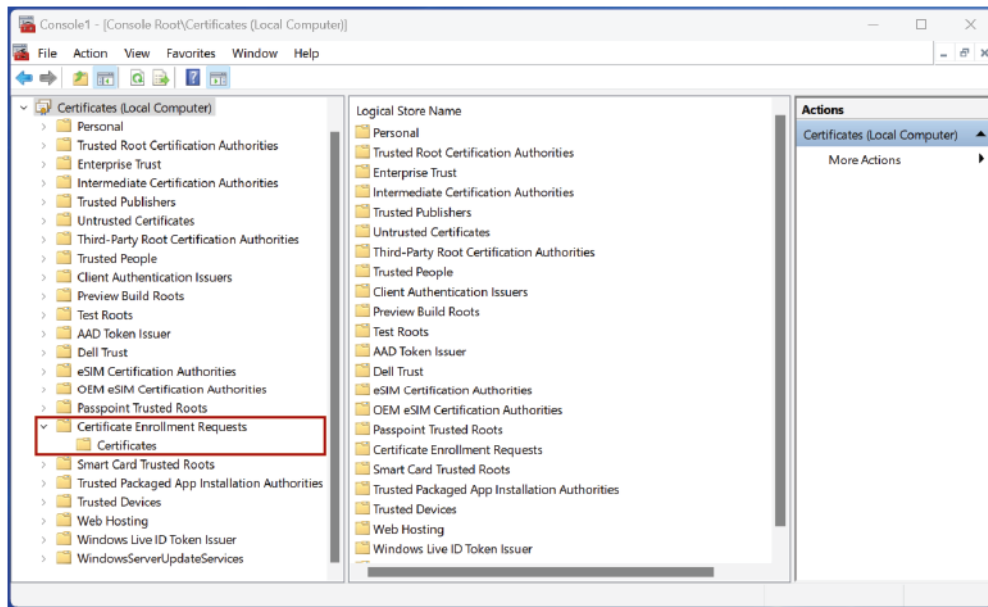
**Figure 4.36 - Add Certificate Snap-in for Computer**

- c Add **Certificate** for **Local Computer** then click **OK**
- 2 Export the **.PFX File**

## 4—Canvas Installation and Setup

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In the MMC we will access the certificate request and export a **.PFX** file (Personal Information Exchange). The .PFX file is password protected and contains cryptographic objects. Once we have the .PFX file we will need to convert it to RSA Private Key Format



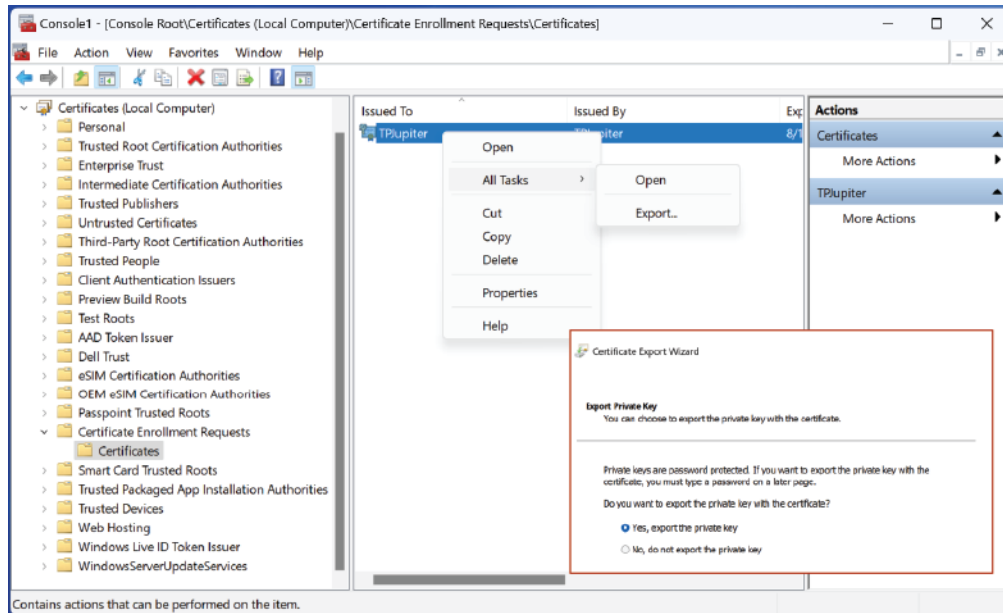
**Figure 4.37 - Locate the Certificate**

- a* In the Console of the MMC, open **Console Root | Certificates (Local Computer) | Certificate Enrollment Requests | Certificates** to access the CSR
- b* Select the certificate from the center pane, right click, and select **All Tasks | Export**



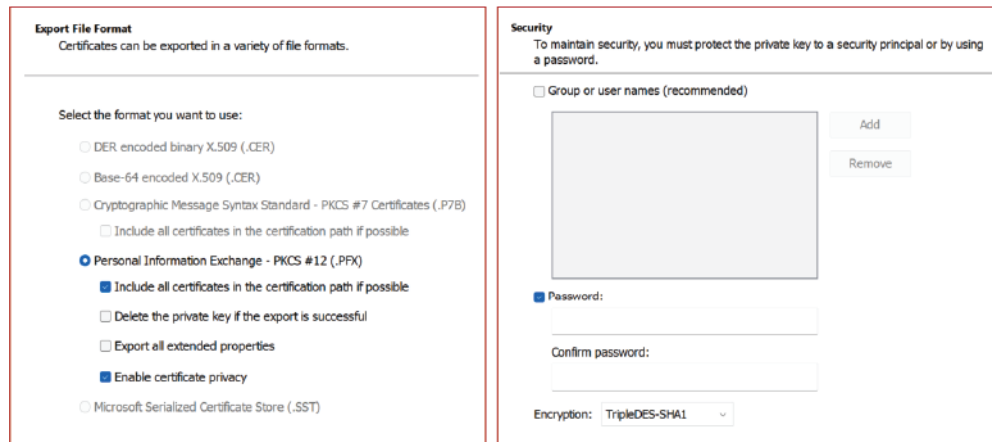
## 4—Canvas Installation and Setup

*c* Traverse the wizard, select **Yes**, export the private key



**Figure 4.38 - Select the Certificate**

*d* Traverse the wizard, select **Personal Information Exchange... PFX**



**Figure 4.39 - Export Wizard Options and Password**

*e* Set a **Password**

*f* Verify the settings, click **Finish**

3 Store the backup .PFX in a secure manner

The private key is not shared with anyone.

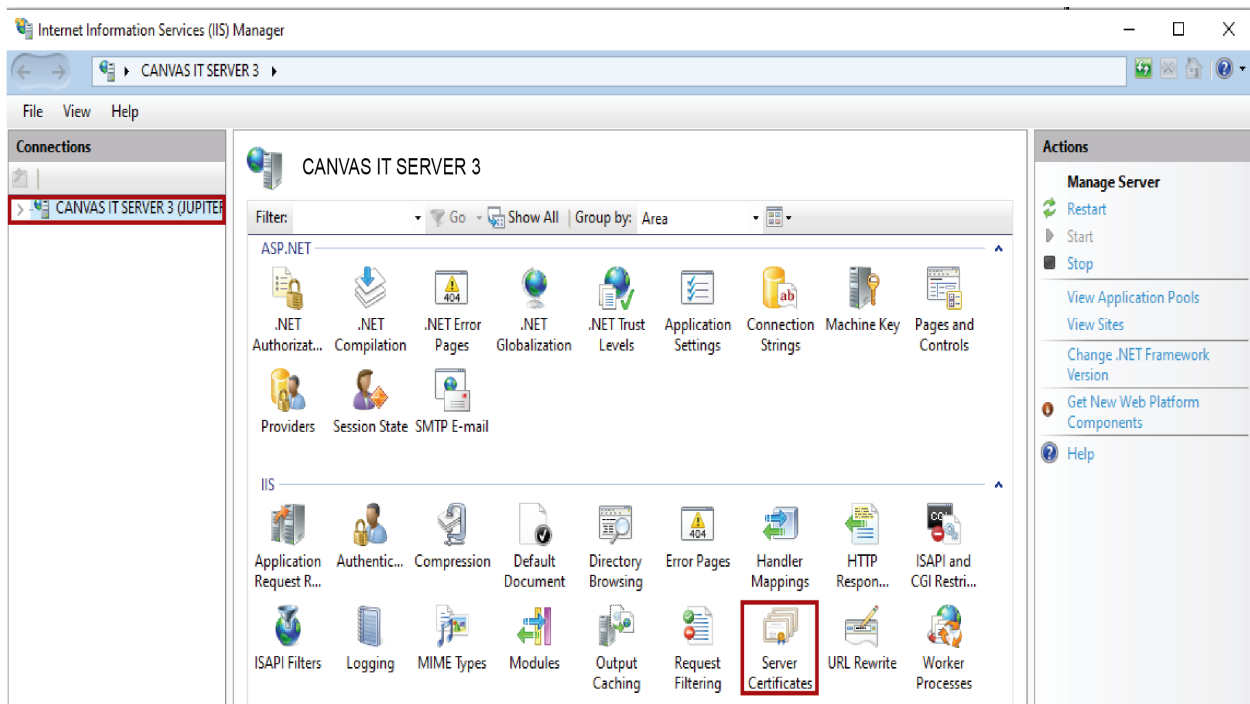
## 4—Canvas Installation and Setup

### 4.13.4 Install Certificate

In this section we provide two procedures for installing the certificate — one using IIS and one using DigiCert’s installation wizard.

#### Install Certificate Using IIS

In this procedure we install the certificate we requested in the procedure [Section 4.13.2 Request a Certificate from a Certificate Authority on page 46](#). If you are using DigiCert they have a wizard and that procedure is introduced in [Install Certificate Using DigiCert Wizard on page 56](#) as well as with greater detail on their website.

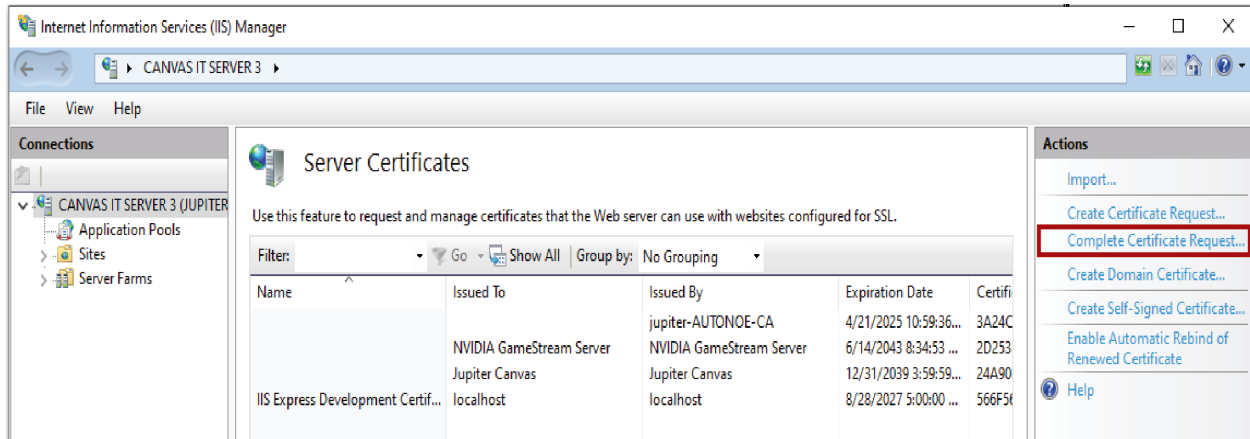


**Figure 4.40 - IIS Connections and Server Certificate, Part 2**

- 1 *Save the returned .cer file from your certificate authority on the server where you created the CSR*  
For this procedure we have downloaded the .cer file to the downloads folder.
- 2 *In IIS select the **CANVAS IT SERVER 3** from the **Connections** pane menu*

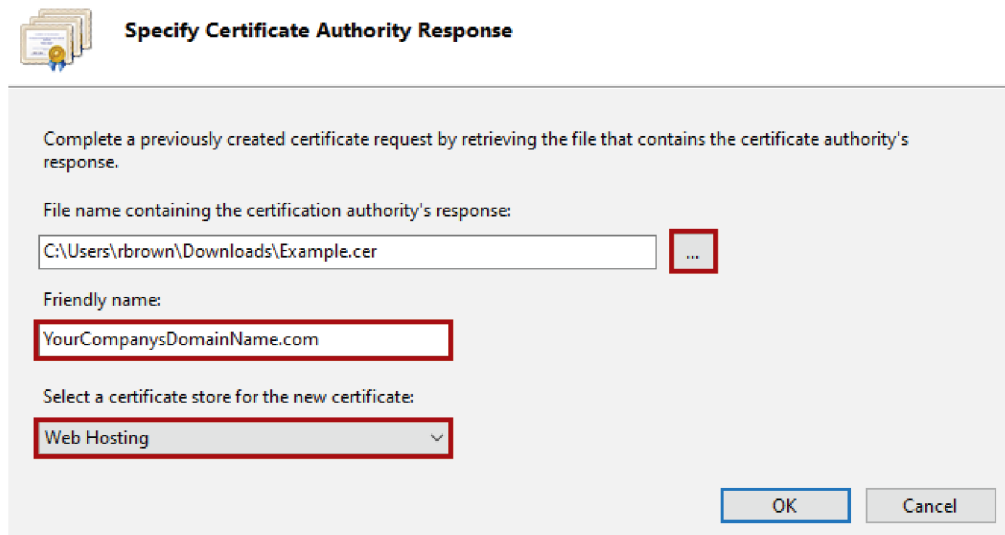
## 4—Canvas Installation and Setup

- 3 Double-click **Server Certificates** from the **CreatedServer Home** pane  
The **Server Certificates** pane opens.



**Figure 4.41 - IIS Complete Certificate Request**

- 4 In the right side **Actions** pane click **Complete Certificate Request**  
The **Specify Certificate Authority Response** page of the **Complete Certificate Request** wizard opens.



**Figure 4.42 - Specify Certificate Authority Response**

## 4—Canvas Installation and Setup

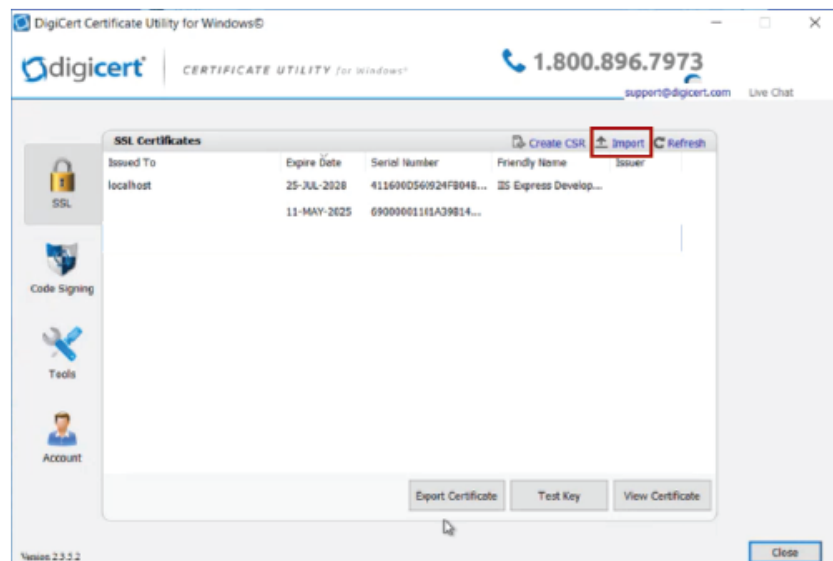
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- 5 *Locate the .cer file, give it a friendly name and define the certificate store*
  - a *At the right hand side of the text box under **File name containing the certification authority's response**, click the ... box and browse to and select the .cer file*
  - b *In the **Friendly name** text box enter a friendly name for the certificate*
  - c *From the **Select a certificate store for the new certificate** dropdown select **Web Hosting***
  - d *Click **OK***
- 6 *Assign and configure the certificate by following the directions in [Section 4.13.5 Bind Certificate to Canvas Web Site on page 58](#)*

### Install Certificate Using DigiCert Wizard

DigiCert provides a procedure for using the DigiCert® Certificate Utility for Windows including verification.

- 1 *Import DigiCert Certificate to the Windows computer which is your Canvas Server*
- 2 *Go to <https://www.digicert.com/kb/util/import-code-signing-certificate-digicert-utility.htm>*
- 3 *Run the DigiCert® Certificate Utility for Windows*

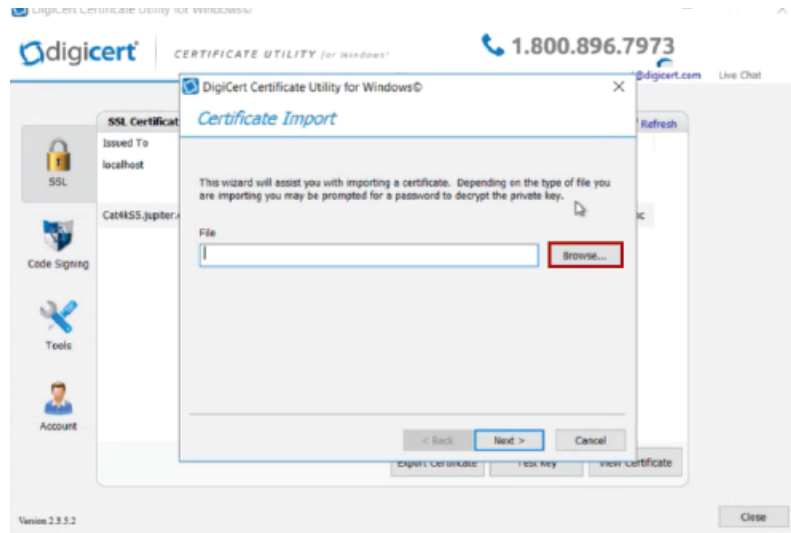


**Figure 4.43 - DigiCert Certificate Utility**

## 4—Canvas Installation and Setup

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- 4 In the DigiCert® Certificate Utility for Windows click **Import**



**Figure 4.44 - Import Certificate Into Utility**

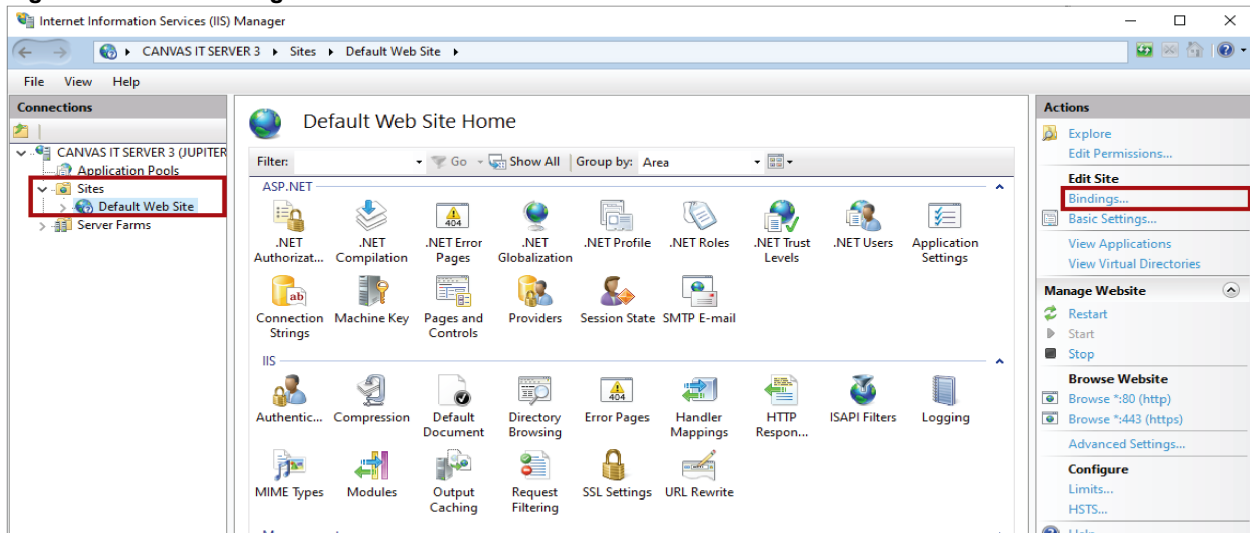
- 5 In the **Certificate Import** dialog click **Browse** and browse to and select the certificate
- 6 Click **Next**
- 7 Click **Finish**

## 4—Canvas Installation and Setup

### 4.13.5 Bind Certificate to Canvas Web Site

In this procedure we bind the certificate to the Canvas Server Web site. Binding means defining the IP address (or unspecified IP addresses with the All Unassigned option), the port number, and an optional host header used to communicate with the site.

Figure 4.1: Add Binding to Web Site



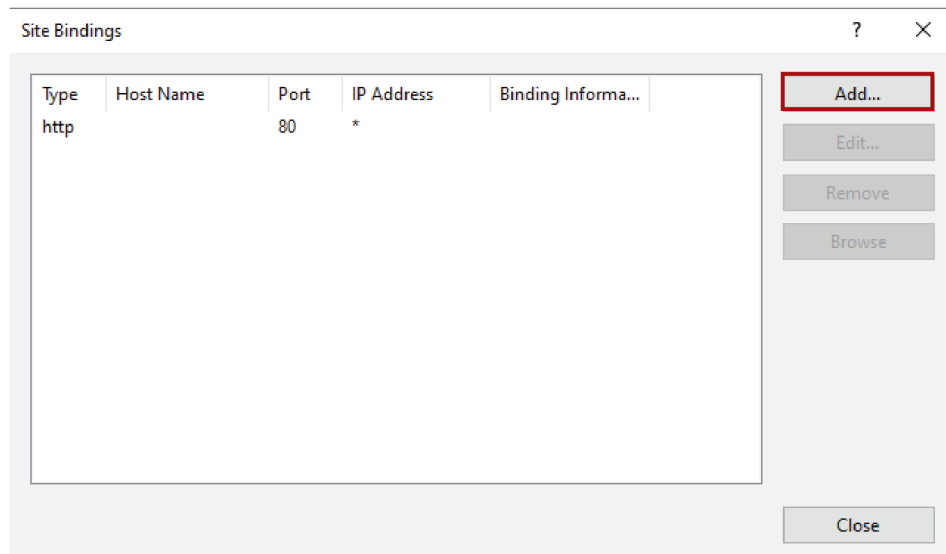
- 1 In IIS on the server where the certificate was installed expand the **CreatedServer** from the **Connections** pane menu tree, then expand **Sites** and select the site to secure with the SSL certificate

In this example we are selecting **Default Web Site**.

- 2 From the right-hand **Actions** pane under **Edit Site** click **Bindings**

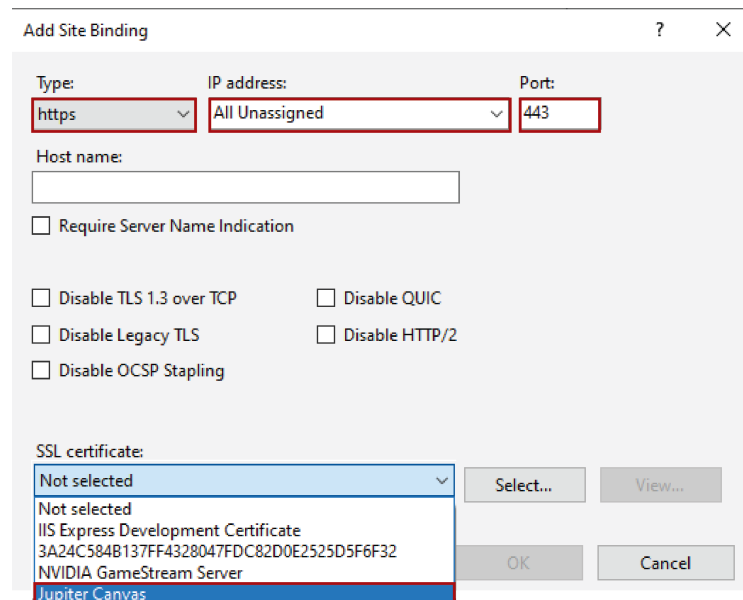
## 4—Canvas Installation and Setup

3 In the **Site Bindings** dialog click **Add**



**Figure 4.45 - IIS Site Bindings | Add**

4 Bind the certificate to the Canvas Web site



**Figure 4.46 - IIS Add Site Binding Details**

## 4—Canvas Installation and Setup

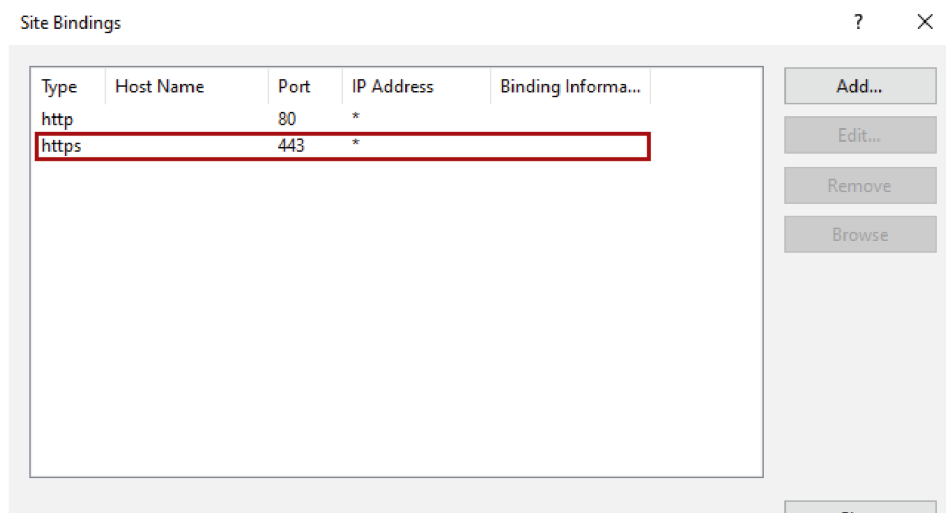
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- a From the **Type** drop down select **https**
- b From the **IP address** dropdown either select the IP address of the site or select **All Unassigned**

The IP address dropdown shows **IP addresses**. **All Unassigned** are all IP addresses not assigned to other sites.

- c In the **Port** text box enter **443**
- d In the **SSL certificate** dropdown select your new certificate
- e Click **OK**

In the **Site Bindings** dialog the **https Port 443** binding will now be displayed which shows that the SSL Certificate is installed.



**Figure 4.47 - IIS Verify SSL Certificate Installed**



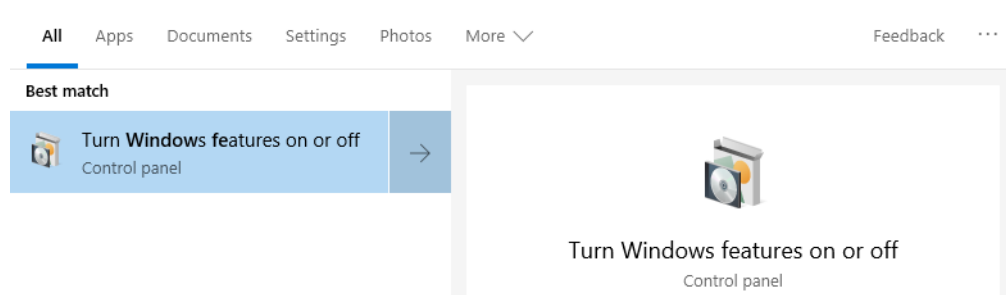
## 4—Canvas Installation and Setup

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### 4.13.6 Enable IIS on Canvas Device with Canvas Client

On the Canvas Device with Canvas Client you need to enable IIS. This change will mean the Canvas Client will accept the shared public key and respond with encrypted information that the Canvas Server can read because it has the private key. No other configuration is needed on the client for HTTPS security.

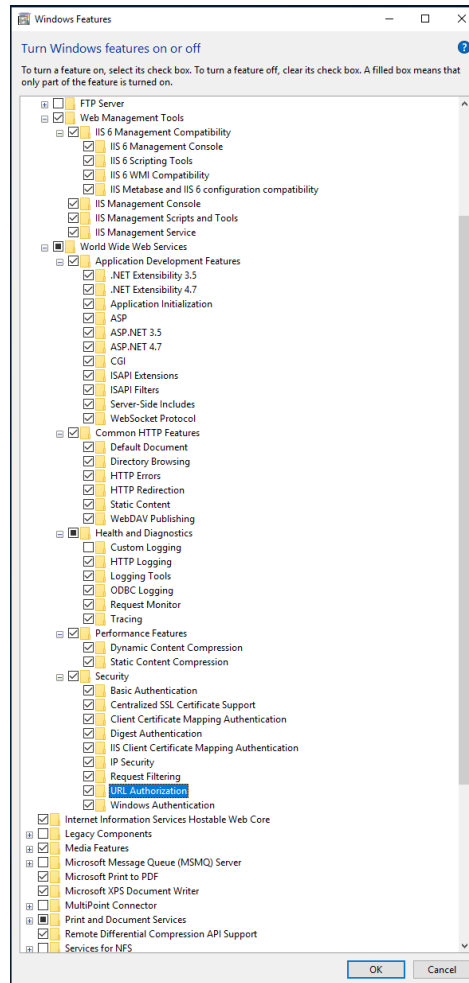
1 Enter **Turn Windows Feature** in *Windows Start Menu*



**Figure 4.48 - Turn Windows Features On or Off Control Panel**

## 4—Canvas Installation and Setup

### 2 Launch the **Turn Windows features on or off** application



**Figure 4.49 - IIS features**

### 3 Check all the **Internet Information Services Services** features

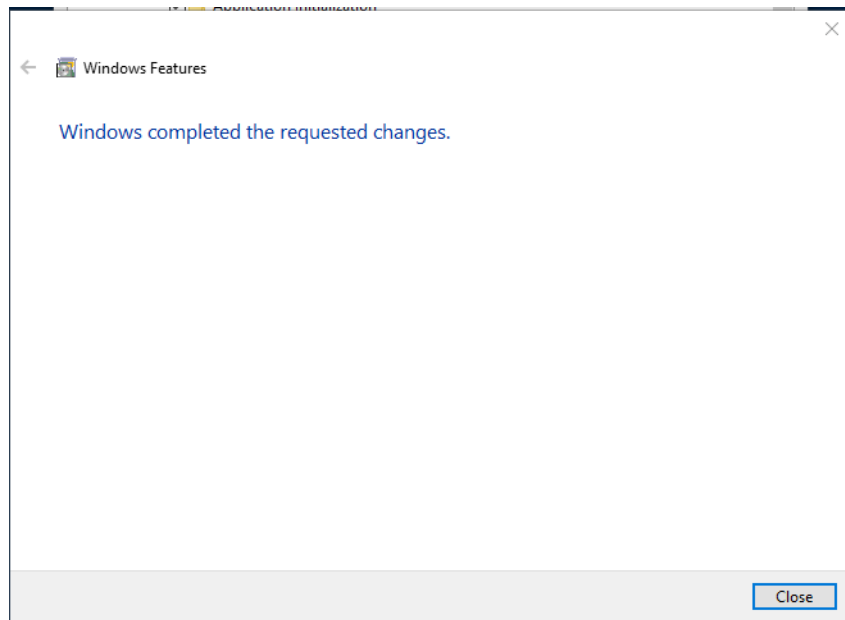
### 4 Check **Internet Information Services Hostable Web Core**

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### 5 Click **OK**

Windows will enable and download if necessary the IIS features.



**Figure 4.50 - Windows Features Complete**

### 6 Click **Close**

## 4.14 Licensing Tool

The Licensing page can be found in the Administration UI. For more information refer to [Section 6.7.3 Licenses on page 186](#).

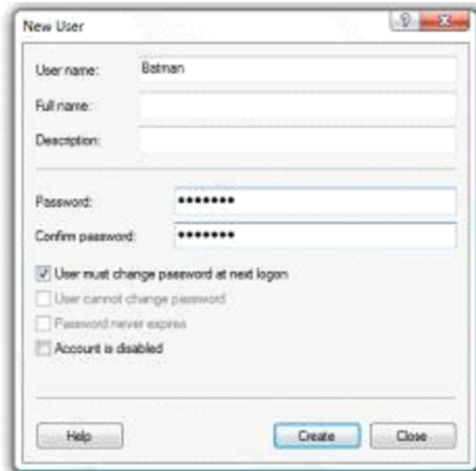
## 4.15 Changing Local Administrator Password

### 4.15.1 Changing Windows Password

Canvas Server is shipped configured as a **Workgroup** member with a default Windows User Name of "**Jupiter**" and no password. It is recommended that the password be changed for security purposes.

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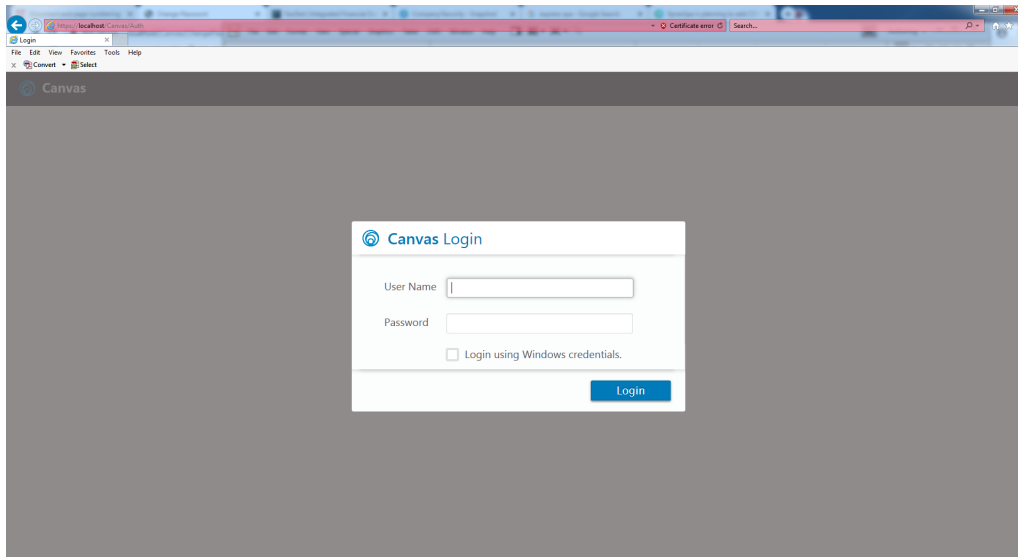
**Figure 4.51 - Window New User Dialog**

## 4—Canvas Installation and Setup

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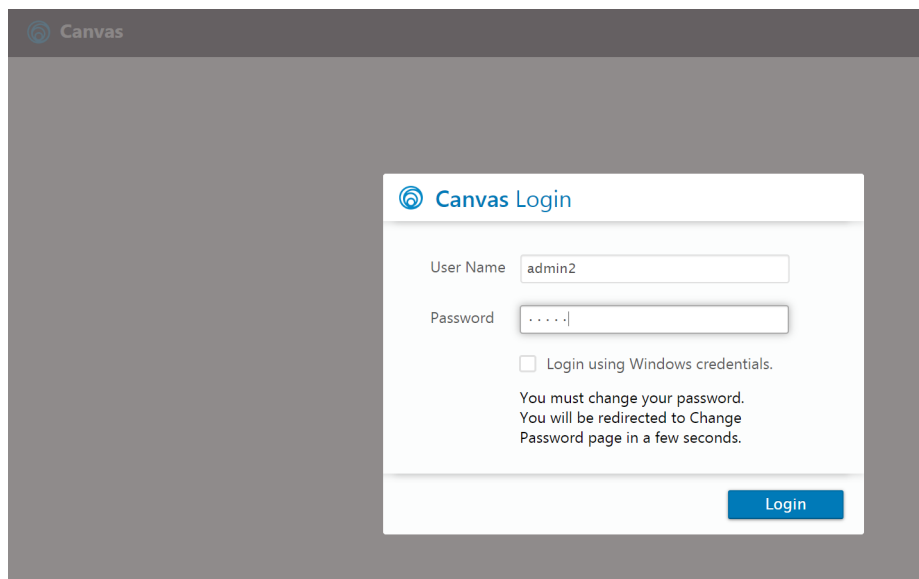
### 4.15.2 Setting Canvas Password for the Administration UI

1. Open a web browser `http://localhost/canvas`.
2. Enter the default Canvas **User Name "admin"** and **Password "canvas"**. The **Password** is changed to **"Jupiter@1"** when Canvas Server is installed at the factory.



**Figure 4.52 - Canvas Administration UI Login**

3. The first login to the Canvas Administration UI will require the password to be changed.

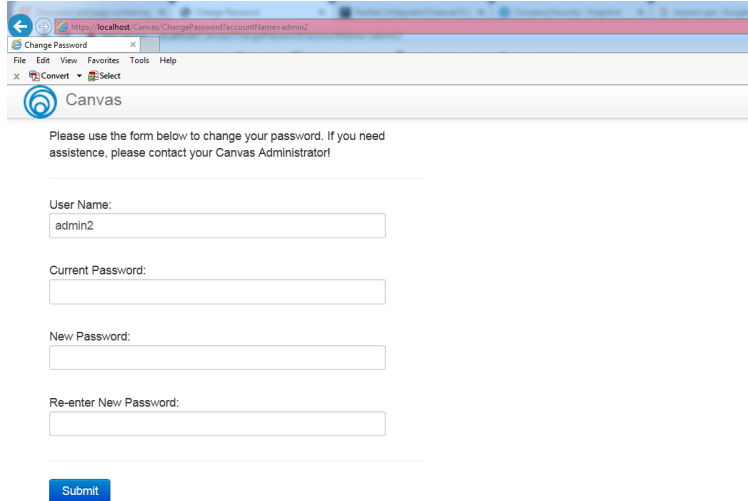


**Figure 4.53 - Required Password Change**

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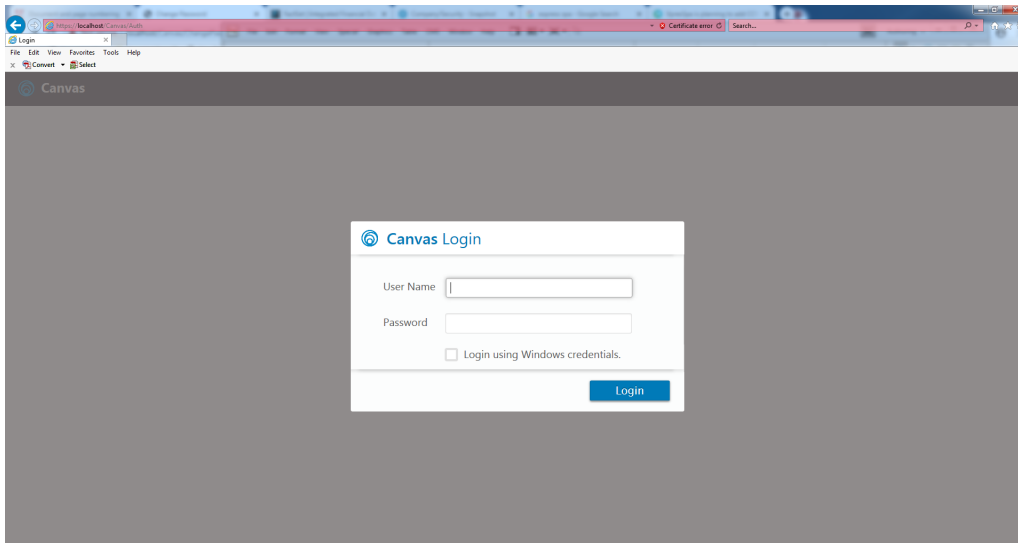
4. In a few seconds, the following screen will appear:



The screenshot shows a web browser window with the address bar displaying `https://localhost:Canvas/ChangePassword?accountName=admin2`. The page title is "Change Password". Below the browser window, the Canvas logo is visible. The main content area contains the following text: "Please use the form below to change your password. If you need assistance, please contact your Canvas Administrator". The form includes four input fields: "User Name:" (containing "admin2"), "Current Password:", "New Password:", and "Re-enter New Password:". A blue "Submit" button is located at the bottom of the form.

**Figure 4.54 - Password Change Form**

5. Fill in the new password and click **Submit**. Login again on the next screen.



The screenshot shows a web browser window with the address bar displaying `https://localhost:Canvas/`. The page title is "Canvas Login". The main content area contains the following text: "Canvas Login". Below this, there are two input fields: "User Name:" and "Password:". A checkbox labeled "Login using Windows credentials." is located below the password field. A blue "Login" button is located at the bottom right of the form.

**Figure 4.55 - Canvas Administration UI Login**

6. If the Administration UI screen appears, the Canvas password has been successfully changed.
7. The Canvas Server installation is complete. Refer to [Chapter 6. Administrative Functions](#) to set up Canvas users, create Canvas Sources and assign permissions. Install a Canvas Client to view sources.

## 4—Canvas Installation and Setup

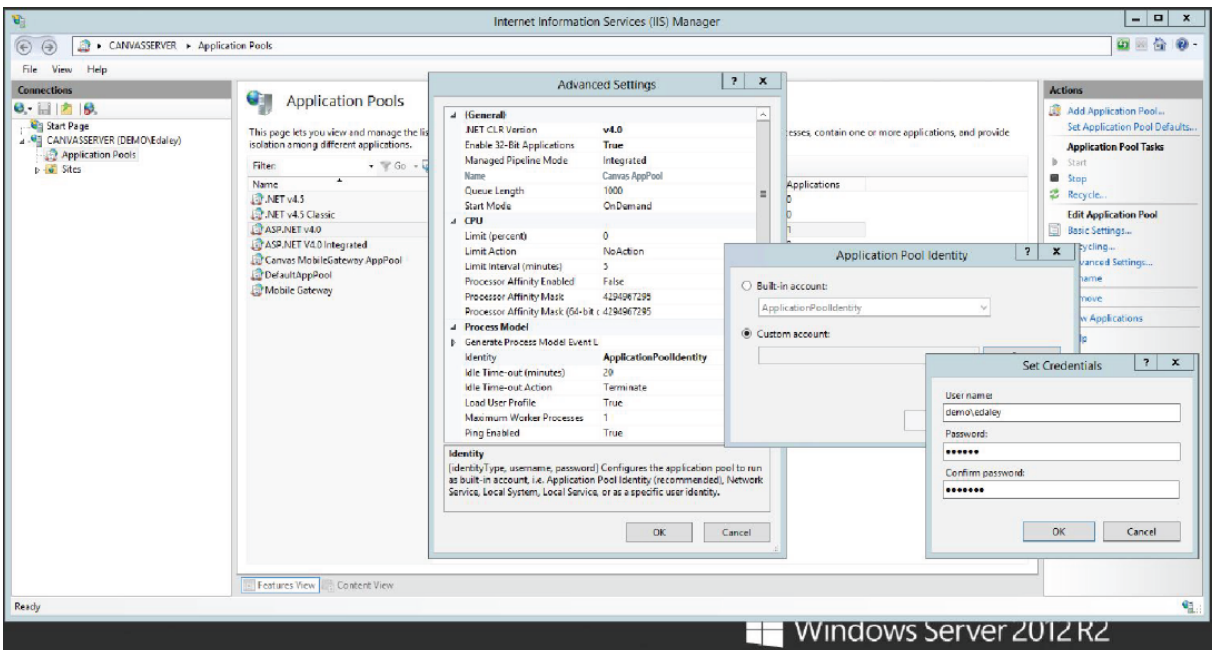
### 4.16 Custom Domain Access

Access to Canvas is controlled by the local Canvas Security database configured in the **Administration UI**. The local **IIS Manager** links to the Domain **Active Directory (AD)** Server when setting up users in the **Administration UI**.

In high security AD environments, the IIS Webservice and Canvas services sometimes do not have permissions to connect to the AD Server using the default **ApplicationPoolIdentity** and local system account. This prevents the Canvas services from connecting to the AD Server. In this situation, set up a custom service account with no password expiry. This custom account can then be used to set up as the custom access to the Application pool in IIS and Canvas services as described in the steps below.

#### 4.16.1 IIS Manager Custom Account

Set up the custom domain account in **IIS Manager**:



**Figure 4.56 - Custom Domain Account**

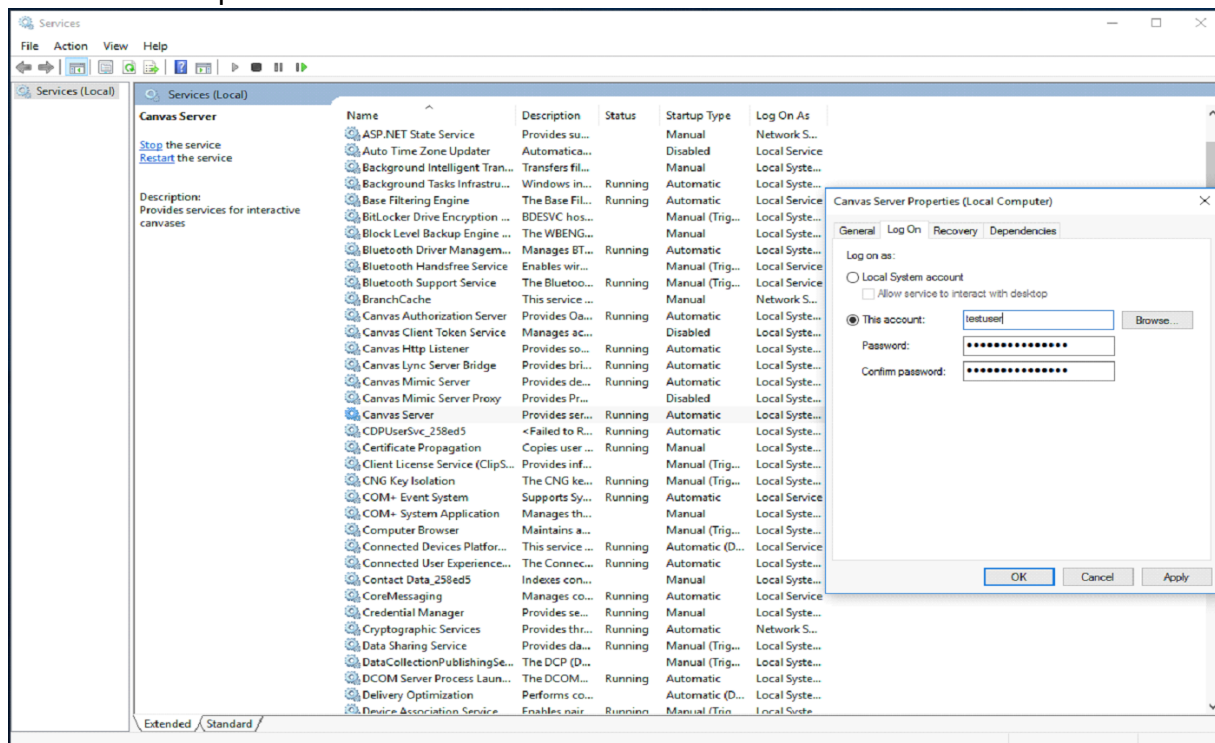
1. Click the **Start** button and type **inetmgr** in the Search field.
2. Click on **Application Pools** in the **Connections** panel on the left.

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3. Select **Canvas AppPool** in the **Application Pools** panel.
4. Click on **Advanced Settings** in the **Action** panel on the right.
5. Click on **Identity** in the **Advanced Settings** panel and select the **Custom Account** button on the Application Pool Identity pop up and click **SET**.
6. Type the **User Name** and **Password** into the fields on the **Set Credentials** panel.
7. Click **OK** and close the window.

### 4.16.2 Canvas Services Custom Account

Set up the custom domain account in **Canvas Services**:



**Figure 4.57 - Canvas Server Custom Accounts**

1. Click the **Start** button and type **services.msc** in the Search field.
2. Select **Canvas Server**, right-click **Properties** and select the **Log On** tab.
3. Click the **This Account** button and Type the **User Name** and **Password** into the fields in **Canvas Server Properties**.
4. Click **OK**.



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5. Verify the **Custom Account** by following the domain user setup procedure in **Administration UI** chapter [Section 6.1.2 Adding Domain Users](#).

### 4.17 Verifying the Canvas Server Installation

To verify that the Canvas Server is fully installed and ready for use:

1. Start the **Windows Services** applet under Administrative Tools in the Control panel and check that the following services are started and configured to start automatically.
  - a. Canvas Authorization Server
  - b. Canvas Server
2. To verify the Canvas License status:
  - a. Open the Administration UI at <http://localhost/canvas>.
  - b. Login with the Canvas **User Name** and **Password**.
  - c. Click **More** in the top menu bar and select **Licenses** in the dropdown menu.
  - d. The **License** page will open, showing the status of all current licenses.

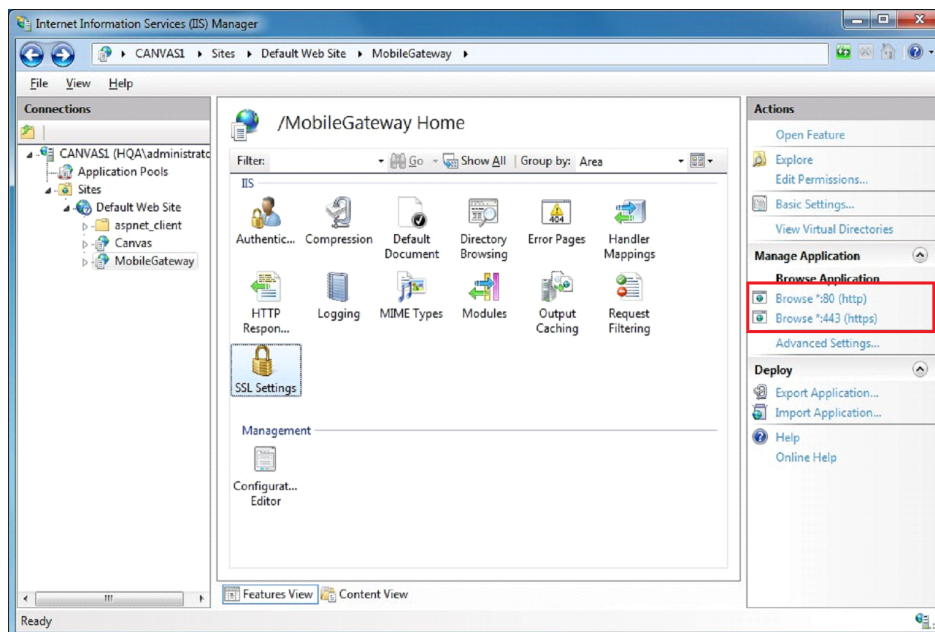
## 4—Canvas Installation and Setup

### 4.18 Verifying HTTPS and Authentication

#### 4.18.1 Verification Procedure

The following procedure verifies that HTTPS has been successfully enabled:

1. In the **Connections** panel on the left side of the **IIS Manager** dialog box, expand the levels, then click on **Default Web Site**.
2. Find the **Browse Application** area on the Actions panel. The links indicate that the **Site Bindings** have been set up properly.



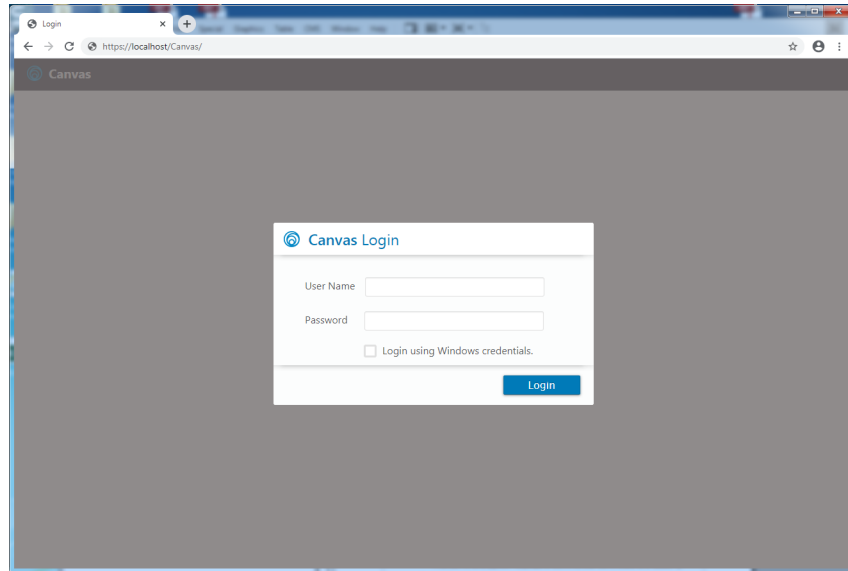
**Figure 4.58 - HTTPS Test Links**

3. Click on either of the links. If error code **500.19** appears, complete [Section 4.19 Repairing .NET](#) before proceeding. If a self-signed SSL

## 4—Canvas Installation and Setup

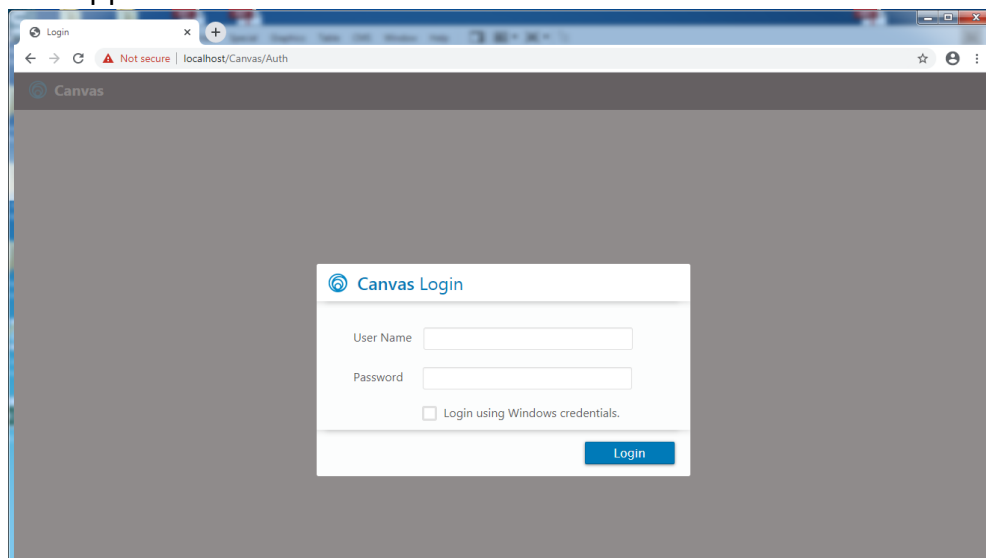
---

Certificate was used, skip to Step 6. For commercial certificates, the Canvas Authentication window below appears:



**Figure 4.59 - Normal Canvas Authentication Login**

4. The URL at the top of the page shows **https**, which verifies the authentication. Log in using the **User Name** and the **Password** set up in [Section 4.15.2 Setting Canvas Password for the Administration UI on page 65](#).
5. You now have access to the **Canvas Administrator UI**.
6. If a self-signed SSL certificate was used, the window below will appear:



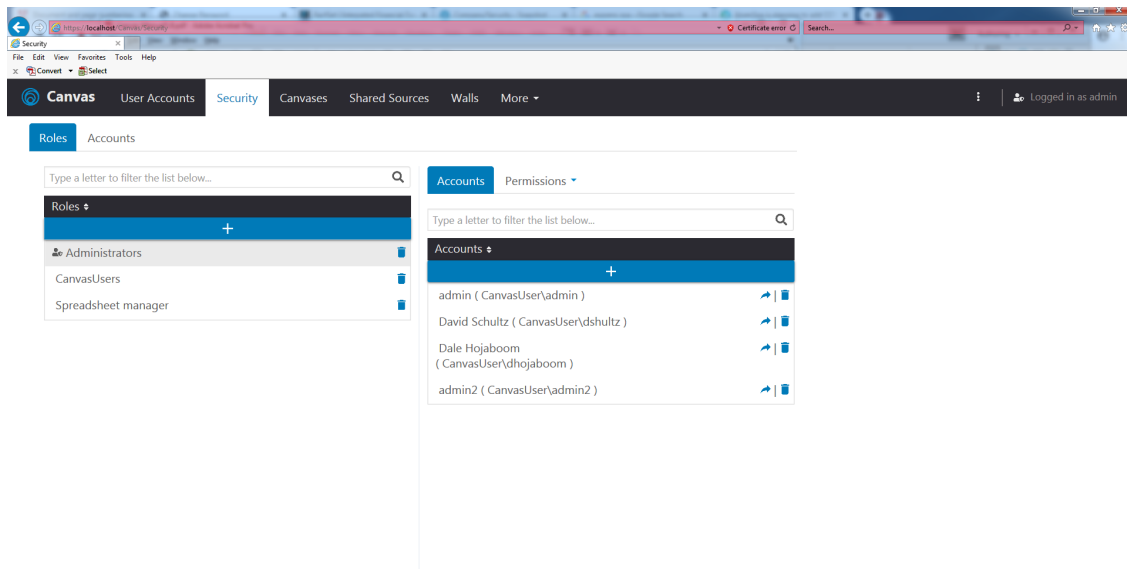
## 4—Canvas Installation and Setup

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**Figure 4.60 - Self-Signed Canvas Authentication Login**

7. Next to the URL address field above, there is a warning that says "Not secure":
  - A self-signed SSL certificate was used. **This does NOT mean that encryption is not working.** Self-signed SSL certificates do not contain the same encryption keys of a commercial SSL certificate and cannot authenticate the server.
  - Your commercial SSL certificate has not been installed properly or has stopped working.

The same encryption keys as a commercial certificate are used.
8. Log in using the **User Name** and the **Password** set up in [Section 4.15.2 Setting Canvas Password for the Administration UI](#).
9. You now have access to the **Canvas Administrator UI**.
10. The screen below shows that the Canvas web site is bound to the SSL certificate and that encryption is working. Note that the URL address field is red with "Certificate Error". This warns that the browser cannot validate the identity of the server.



**Figure 4.61 - Self-Signed Administration UI**

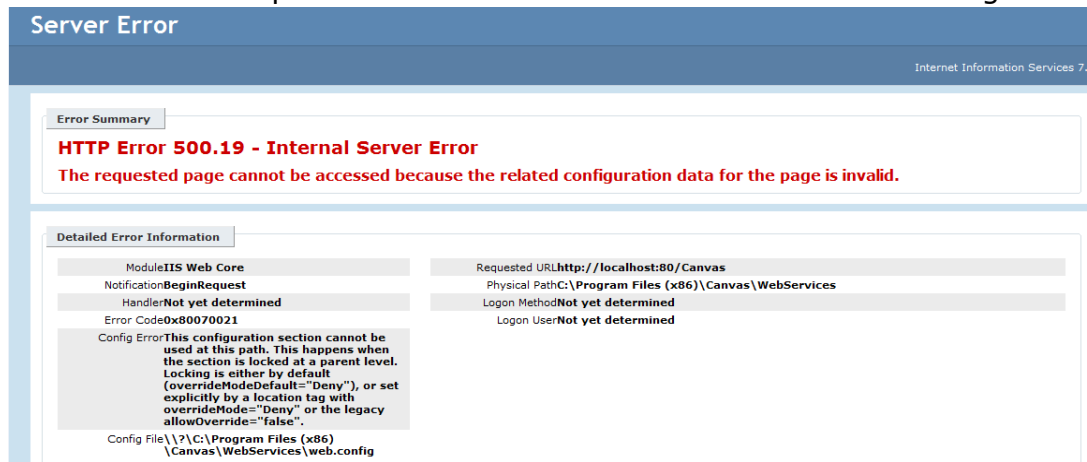
11. There are two solutions:
  - Obtain a SSL certificate from an authorized CA
  - Install Self-Signed Certificates as described in Appendix E.

## 4—Canvas Installation and Setup

### 4.19 Repairing .NET

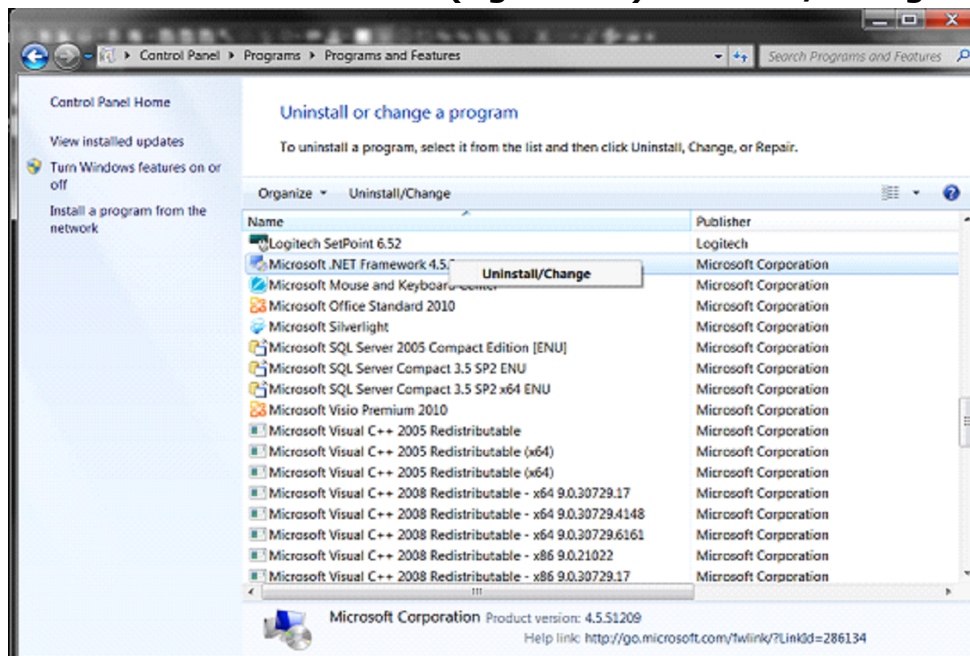
If a Windows 7 system had Microsoft .Net Framework installed before enabling the IIS feature, the Canvas Admin page will show the error code 500.19 after installation completes.

You must repair .NET framework to resolve this error message.



**Figure 4.62 - HTTP Error 500.19**

1. Go to:  
**Control Panel—>Programs—>Programs and Features -> Microsoft .NET Framework 4.6.1—>(right-click) Uninstall/Change**

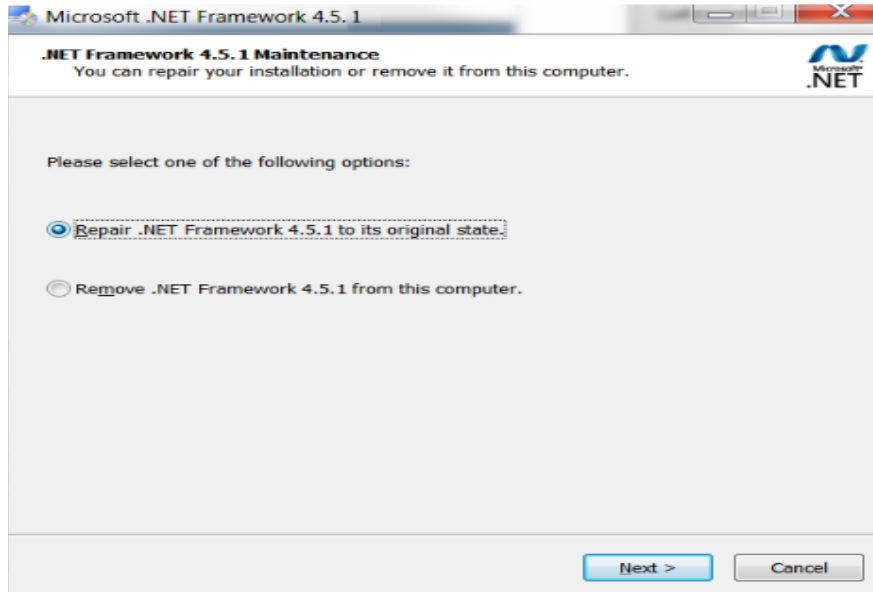


**Figure 4.63 - .NET Uninstall/Change**

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2. Select **Repair .NET Framework 4.6.1 to its original state.**



**Figure 4.64 - Repair .NET Framework 4.6.1**

3. Click **Next**. The repair is complete.

## 4—Canvas Installation and Setup

### 4.20 Canvas Logs

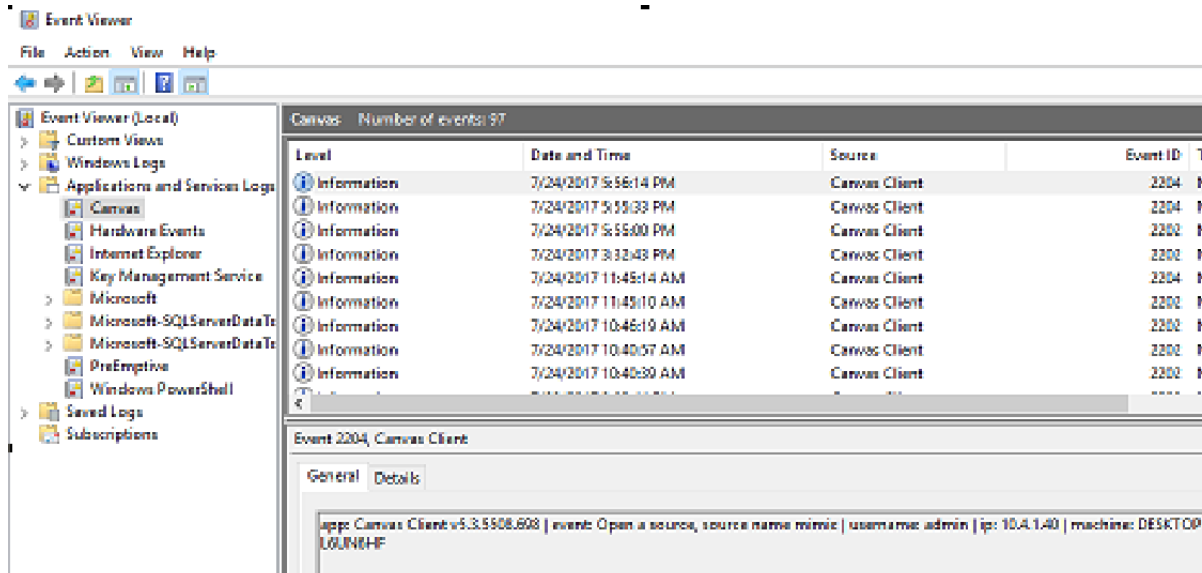
#### 4.20.1 Log Files

Canvas Server and Client log files may be found in the following locations:

C:\ProgramData\Canvas\Server\Logs\  
 C:\ProgramData\Canvas\Client\Logs\

##### 4.20.1.1 Windows Security Logs

Canvas Server logs security events in Windows Events Viewer. The following is a list of the events logged and their description:



**Figure 4.65 - Windows Security Logs**

**Table 4. 9: Window Security Logs**

Event ID	Description
2000	Administration UI Login
2001	Administration UI Logout
2002	Administration UI CreateCanvas
2003	Administration UI DeleteCanvas
2004	Administration UI CreateSource
2005	Administration UI DeleteSource
2006	Administration UI DeleteLayout
2007	Administration UI RestoreBackup
2008	Administration UI RestoreBackupFromFile

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**Table 4. 9: Window Security Logs (Continued)**

2009	Administration UI DeleteBackup
2010	Administration UI AddRole
2011	Administration UI DeleteRole
2012	Administration UI AddPrincipalToRole
2100	Mimic Client Login = 2100
2101	StartScreenShare
2102	StopScreenShare
2103	Mimic Client Apply Layout
2200	Client Login
2201	Client Logout
2202	Client Load Canvas
2203	Open Canvas
2204	Open Source

### 4.20.2 Log File Utility

System logs are an important tool for troubleshooting issues. The **GetCanvasLogs** utility simplifies the extraction and transmission of these files. The log utility is installed on all Canvas systems. The default path for the **GetCanvasLogs** utility is:

C:\Program Files\Canvas\Utilities\GetCanvasLogs

1. Copy **GetCanvasLogs** to the desktop or preferred file location, open, right-click on the **GetCanvasLogs** Batch file and click **Run as administrator**. This creates a **Canvaslog\_[datecode].7Z** file in the **GetCanvasLogs** folder.
2. Send this file to support@jupiter.com, along with a problem description.



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### 4.21 Canvas Virtual Screen Setup

#### 4.21.1 Catalyst Firmware Update Installation

The firmware on the Catalyst must be updated before installing the new Canvas software.

##### 4.21.1.1 Creating a Catalyst Firmware Flash Drive

Catalyst Firmware Updates are saved as an ISO file on the installation disk at: Canvas Client: Utilities/CatalystDiagnostic/CatalystUpdate\_XX\_XX\_XXX\_XX.iso

Two methods are available for doing the firmware update:

1. Burn the ISO image onto a flash drive

##### 4.21.1.2 Burning the ISO image onto a Flash Drive

To burn the ISO image onto a Flash drive on the Catalyst

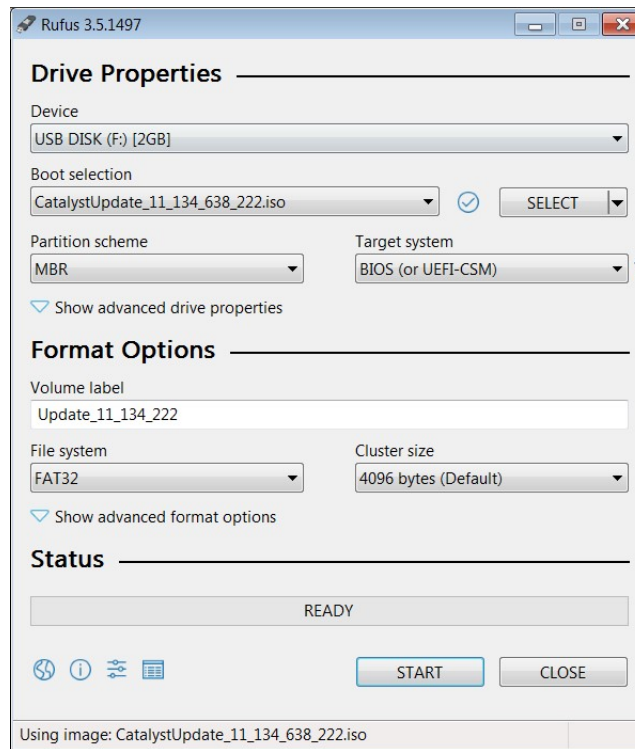
1. Download the latest Roofus program onto a computer <http://roofus.ie> then click to download the latest version.
2. Double click on the roofus.exe file to launch it
3. Insert the target USB drive in the computer and it should appear in the Device field. Otherwise, select it manually.
4. Click the Select button to select the CatalystUpdate\_\_xx.iso file. (May need to click on the button twice.)
5. Once the ISO image is selected, it will fill in the "Partition scheme" and "Target System" fields.
6. Change the "Volume label" if desired.

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7. Accept the default FAT32 file system and 4096 Cluster size unless you need to change them.

At this point, the Rufus window should appear similar to the following:



**Figure 4.66 - Rufus Drive Properties**

8. Click on the Start button. The burn process will begin and the green status bar will display the progress.
9. When done, the green progress bar will indicate "Ready". Click on the Close button and remove the flash drive.

### 4.21.1.3 Instructions for using Firmware Update Flash Drive

Load the Firmware Update flash drive into the Catalyst and restart the system. It will boot into Linux and show a simple text screen:

1. At the command prompt, type "1", part of this command will compare and update, if necessary, any Quad HD boards.
2. Firmware Updates apply to two areas of programming:
  - FPGA updates require about 2-3 minutes
  - Components of the flash memory (u-boot, environment, and zmlinux) can take 5-6 minutes per board on a large system.

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- VGA Bios, Edid table updates
3. Hit the enter key to watch the progress. The updater will go through all of the system boards.
  4. Wait for "\*\*\* ipdecoder SPI flash update DONE \*\*\*" and "Type q to exit log viewer". (If there are any inconsistencies in the number of boards, please contact us before proceeding to Windows).
  5. Type "q" to exit.
  6. Restart and remove the Flash Drive before the system reboots.

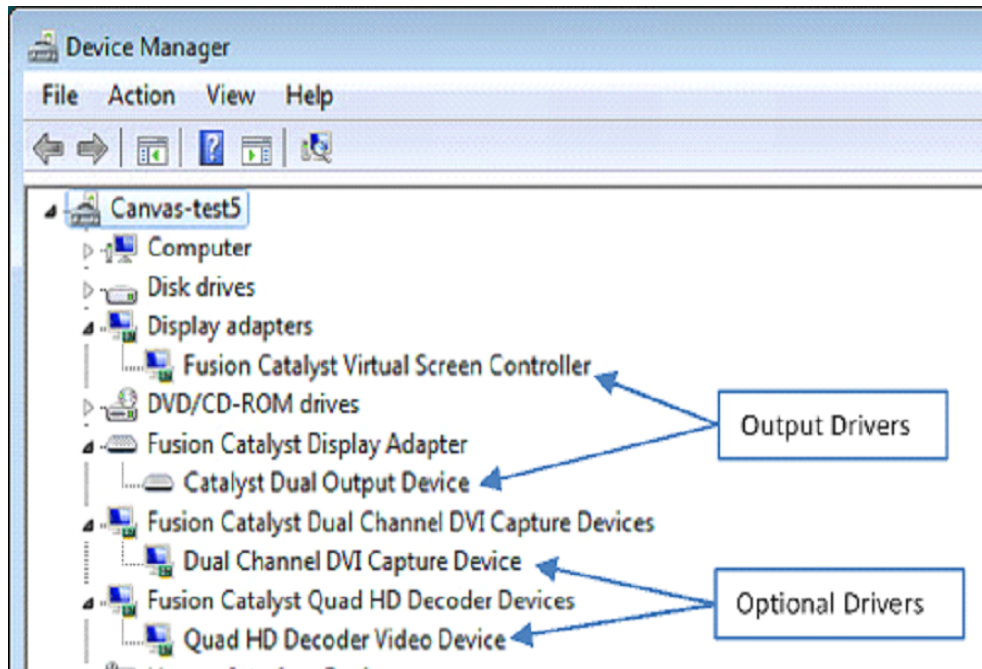
### 4.21.2 Canvas Virtual Screen

**VSConfig** is installed by default on Catalyst Wall Processors. **Canvas VirtualScreen (VSConfig)** is used to configure the wall dimensions and output resolution of the **Catalyst** wall processor. In addition, there are options for setting **Landscape** or **Portrait** mode, turning **EDID** on and off, selecting analog or digital monitors, turning thumbnails in the **Canvas Mimic** on and off, and displaying test patterns on the wall. Canvas Virtual Screen is automatically installed with Canvas

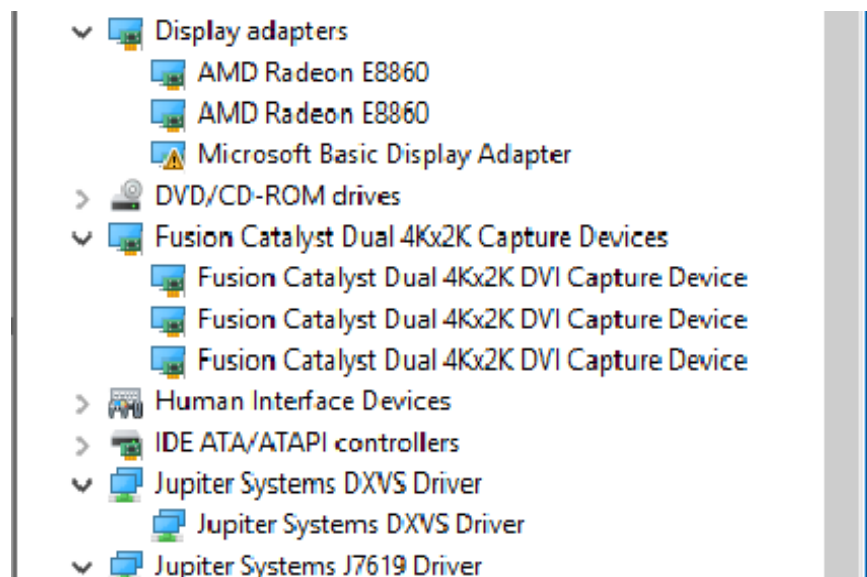
1. After the system has restarted, open the **Windows Device Manager** and check for the following Catalyst Device Drivers:
  - Catalyst Virtual Screen Controller (under Display adapters)
  - Catalyst Dual Output Device (under Fusion Catalyst Display Adapters)
  - Quad HD Decoder Video Device (under Fusion Catalyst Quad HD Decoder Devices)

## 4—Canvas Installation and Setup

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**Figure 4.67 - Device Drivers for FC4000 & FC8000**



**Figure 4.68 - Device Drivers for FC4500 & Windows 10 Catalysts**

2. Proceed to the next section to configure the Canvas **VirtualScreen**.

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### 4.22 Configuring Wall Controller on Catalyst

To configure **Canvas** on a **Catalyst** system:

- Use the Quick Start Guide or the Display Map in [Section 4.22.4 Other VSConfig Options](#) to connect all of the wall displays correctly.

or

- Connect a monitor with the same resolution as those on the display wall to Output Channel 1, start the system and perform the following in the given order:
  1. Open the **VSConfig** dialog, click on **Device Map** ([Section 4.22.4.2 Device Map](#)) and verify that the boards are in the slots shown. If not, click on **Rebuild Device Map** and reboot the system when it is completed and check the **Device Map** again.
  2. On the **VirtualScreen** tab of the **VSConfig** utility configure the **Wall Geometry** and **Screen Resolution** as described in [Section 4.22.1 VSConfig Wall Setup](#).
  3. Set **Visual Effects** as described in [Section 4.22.4.8 Visual Effects](#).
  4. If **Quad HD Decoders** are installed, configure per [Section 4.22.5 “Configuring Quad HD Decoder”](#).
  5. Configure the **Canvas Client** in [Section 7.1 Using the Canvas Client](#).

---

**Note:** When configuring your Wall Controller for the first time, the Catalyst will be pre-configured for a 1x1 wall (i.e., a single display). Be sure to connect a monitor to Output channel 1 that has the same resolution as the other wall displays.

---

Your Display wall can be configured with the VSConfig utility in a few basic steps. These steps will be covered in detail in the following sections.

1. Determine which channels to connect to the displays.
2. Configure the wall array geometry.
3. Configure the display outputs to projectors, cubes, monitors, flat panels; resolution, color depth, and frequency.

---

**Caution:** The User Account Control (**UAC**) needs to be disabled to run **VSConfig**. The factory default is **UAC** is disabled. Configure **VSConfig** before turning it on.

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## 4—Canvas Installation and Setup

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**Caution:** You must restart your Catalyst Wall Controller system whenever any changes are applied to the **VSConfig**.

---

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**Note:** The Catalyst 4K/5K does not support DP MST. If using Catalyst 4K/5K Output Board (4-540-337-0) with Pana 105/81 or other monitors which support DP MST, ensure that DP MST is disabled.

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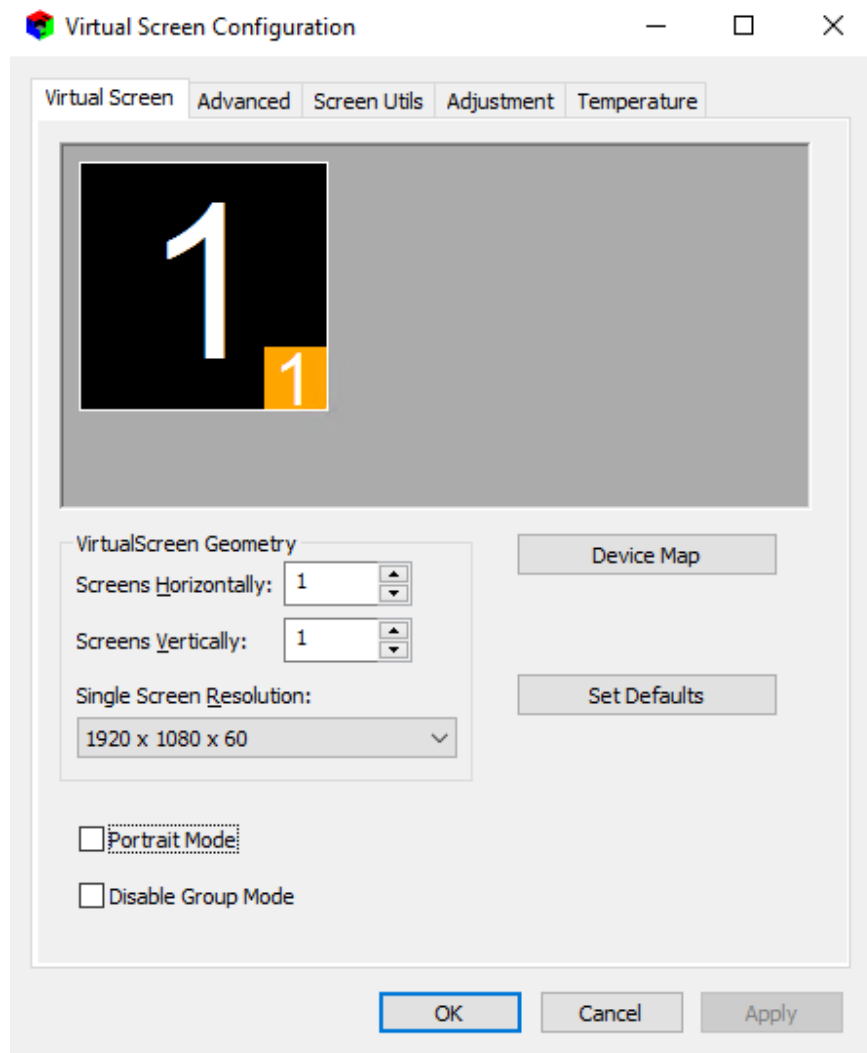
---

### 4.22.1 VSConfig Wall Setup

1. Run **VSConfig**.

On **Windows 10 Processors**:

Click on the Windows icon and scroll down to the application or enter **VSConfig** in the search field.



**Figure 4.69 - Virtual Screen Configuration**

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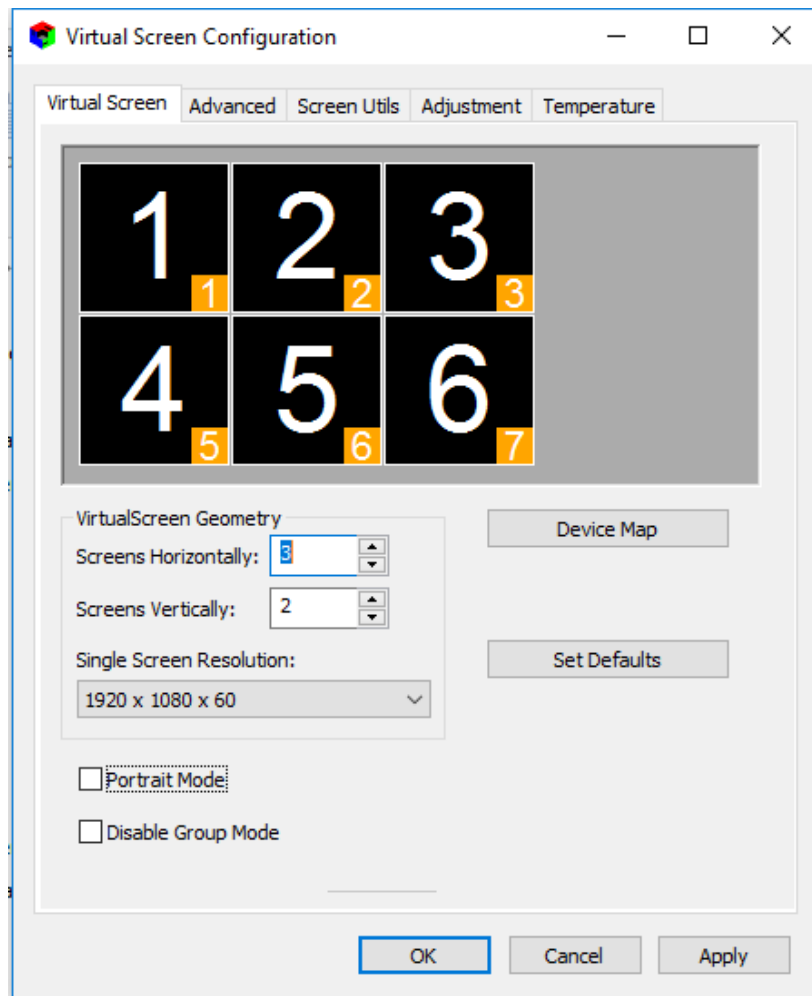
**NOTE:** If high resolution displays are used, text may be too small. The font size may be increased by going to Windows Control Panel>Display.

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2. Set the **VirtualScreen Geometry**, with the horizontal count on top and the vertical count below.
3. Select the **Single Screen Resolution** from the drop down menu that matches the native resolution of the wall monitors. In the following example, it is: 1920 x 1080 @ 60 Hz.



**Figure 4.70 - Virtual Screen Wall Geometry**

4. The number of displays in the wall array must be less than the number of configured Output channels. The array can be configured with only one display connected to Channel 1 (the bottom connector on the boot board).
5. Click **OK** when prompted to restart Windows. Skip to **Step 11** for **Windows 7** processors. **Windows 10** processors require **Steps 7-11**.



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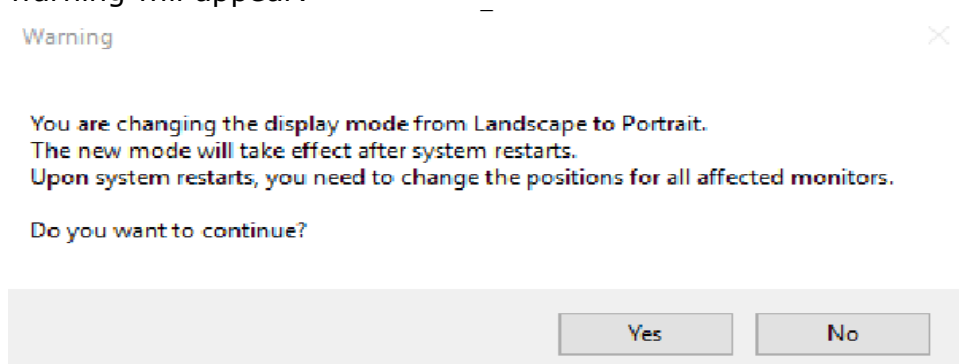
---

6. After the 1st restart, **VSConfig** opens automatically.
7. Click **OK** at the prompt.
8. **VSConfig** acquires **EDID** from the first display.
9. After **VSConfig** configures the wall, click **OK**.
10. The system will restart and a message appears that explains the blanking and flashing patterns as the system continues to set up. Wait for the desktop to open on the display wall after this process.
11. If the desktop appears across the whole wall, proceed to [Section 4.22.4.8 Visual Effects on page 105](#).
12. If the desktop does **NOT** appear on the wall displays or the windows are improperly scaled or cropped, the cause may be:
  - Output connections were swapped or missing during bootup.
  - The displays returned a non-standard EDID. (No displays)
13. Open **VS Config** and click on **Set Defaults** to reset the system. The system will prompt a restart. Shut down, correct any improper Output connections and restart.
14. If your displays are a standard resolution and the displays remain blank, send an email detailing your problem to [Support@jupiter.com](mailto:Support@jupiter.com).

If you are using LED arrays or non-standard resolutions and they remain blank, open **VS Config** and set up a **Custom Mode** resolution as described in [Section 4.22.3 Custom Mode](#).

### 4.22.2 Catalyst Portrait Mode

To configure portrait mode displays, click on the **Portrait Mode** box shown earlier in [Section 4.70 Virtual Screen Wall Geometry](#). The following warning will appear:



**Figure 4.71 - Portrait Mode Warning**

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1. Select the desired resolution from the **Preset List** and click **OK**.  
For **Portrait Mode** select the **Landscape** mode with the rotated pixel counts that match.
2. Click **OK** when prompted to restart the system.
3. Open **VSConfig**. The name of the Portrait mode resolution will appear in the **Single Screen** drop down menu.
4. Select the **Custom Resolution** and restart the system.
5. Proceed to *Section 4.22.4.8 "Visual Effects"*.

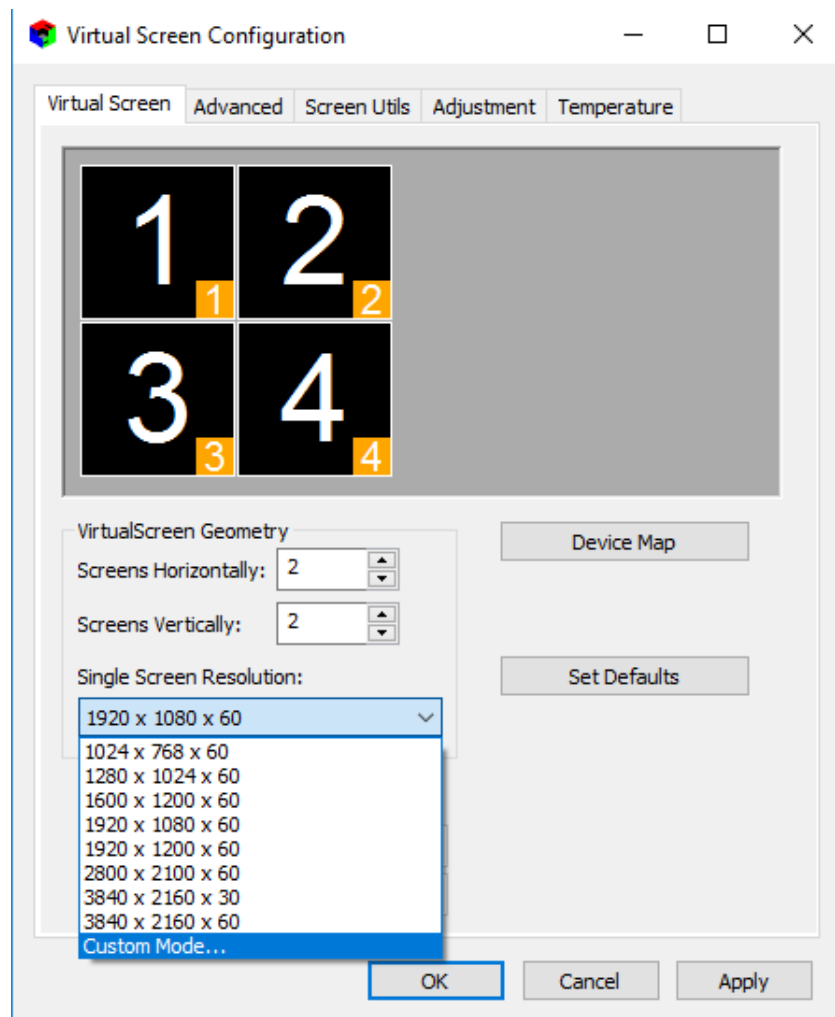
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### 4.22.3 Custom Mode

**VSConfig** can accommodate monitors that require special resolutions, e.g., ones that are not part of the standard resolution options.

1. Click on **Set Defaults** to reset the system to its original status.
2. Bring up the **Single Screen Resolution** drop-down menu as shown below:



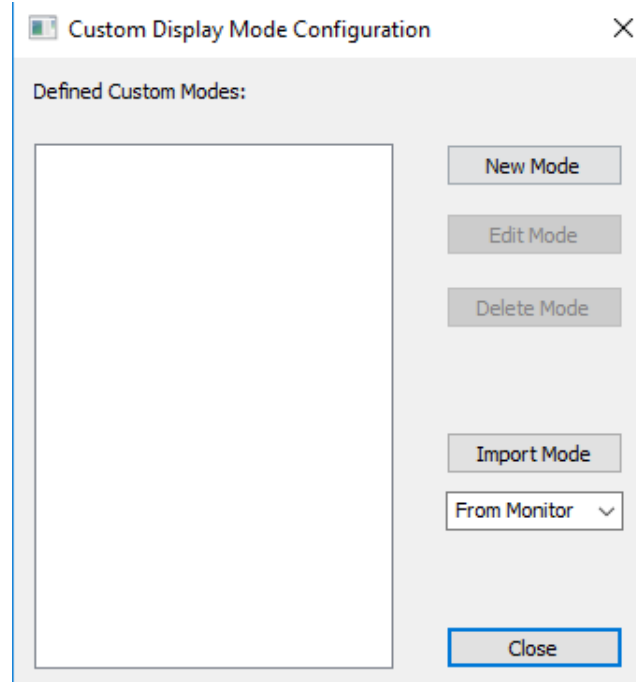
**Figure 4.72 - Selecting Custom Mode**

3. Select **Custom Mode** at the bottom:
4. The **Custom Display Mode Configuration** dialog appears.

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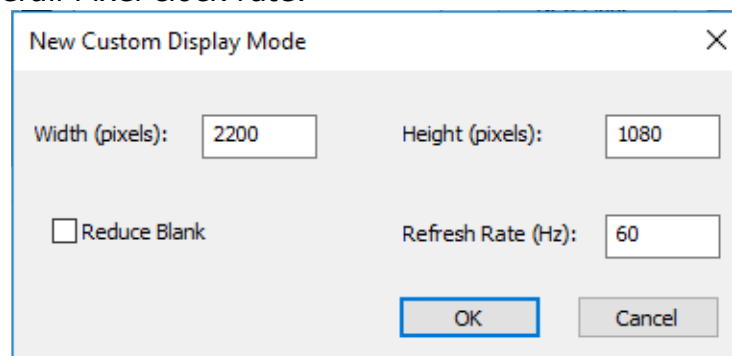
---

5. The screen will initially be empty.



**Figure 4.73 - Custom Display Mode Configuration Dialog**

6. Click the **New Mode** button to bring up the entry dialog shown below.
7. Enter the **Width** and **Height** values in pixels. Refer to the resolution required by your display device
8. Select the **Reduce Blank** option to reduce horizontal and vertical blanking for non-CRT based displays. This is typically used when high resolutions exceed Jupiter's maximum Pixel clock rate when used with normal blanking. Reduced blanking allows for a smaller overall Pixel clock rate.



**Figure 4.74 - Example of a New Mode**

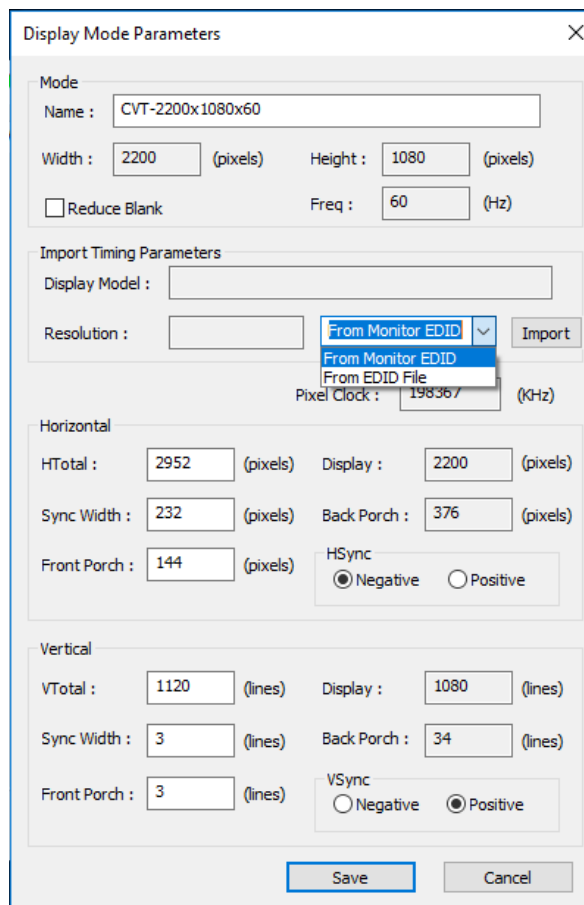
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9. Enter the refresh frequency required by the display device in the **Refresh Rate (Hz)** field.
10. Click the **OK** button. When the basic information is entered, clicking OK opens the **Display Mode Parameters** dialog.

### 4.22.3.1 Custom Presets

1. A default name is given to the **Custom Mode** (CVT-2200x1080x60 above). Enter a more descriptive title if desired.



**Figure 4.75 - Display Mode Parameters**

2. On **Fusion Catalyst Windows 7** processors, the pixel data is initially generated based on the parameters you enter for the Custom Mode. Go to Step 4.

Although the available parameters (those in white enabled fields) can be modified, it is only recommended if you have been provided specific parameters by a manufacturer.

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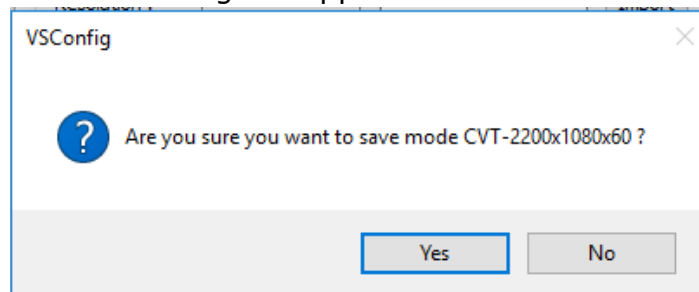
---

Note that Horizontal pixel entries in **Custom Modes** must be **divisible by eight**.

3. On **Catalyst Windows 10** processors, click on the **Import** drop down and select **From EDID File**. A list of resolutions will appear. Select the desired resolution from the **Preset List** and click **OK**.

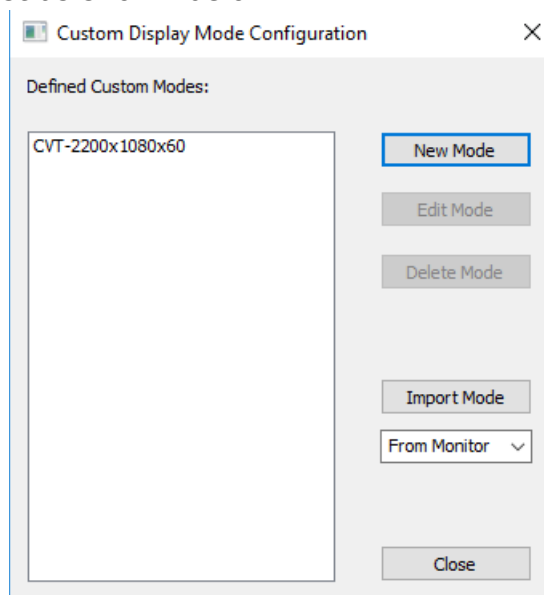
**Additionally:** custom resolutions can be added by importing a EDID file, the default EDID files are found in  
C:/ProgramData/Canvas/PresetEdid.

4. Click **Save** to save the Custom Mode. The following confirmation dialog will appear:



**Figure 4.76 - Custom Mode Confirmation Dialog**

5. Click **Yes** to save the pixel values.
6. When the new resolution is saved, it will appear in the **Custom Modes** list as shown below:

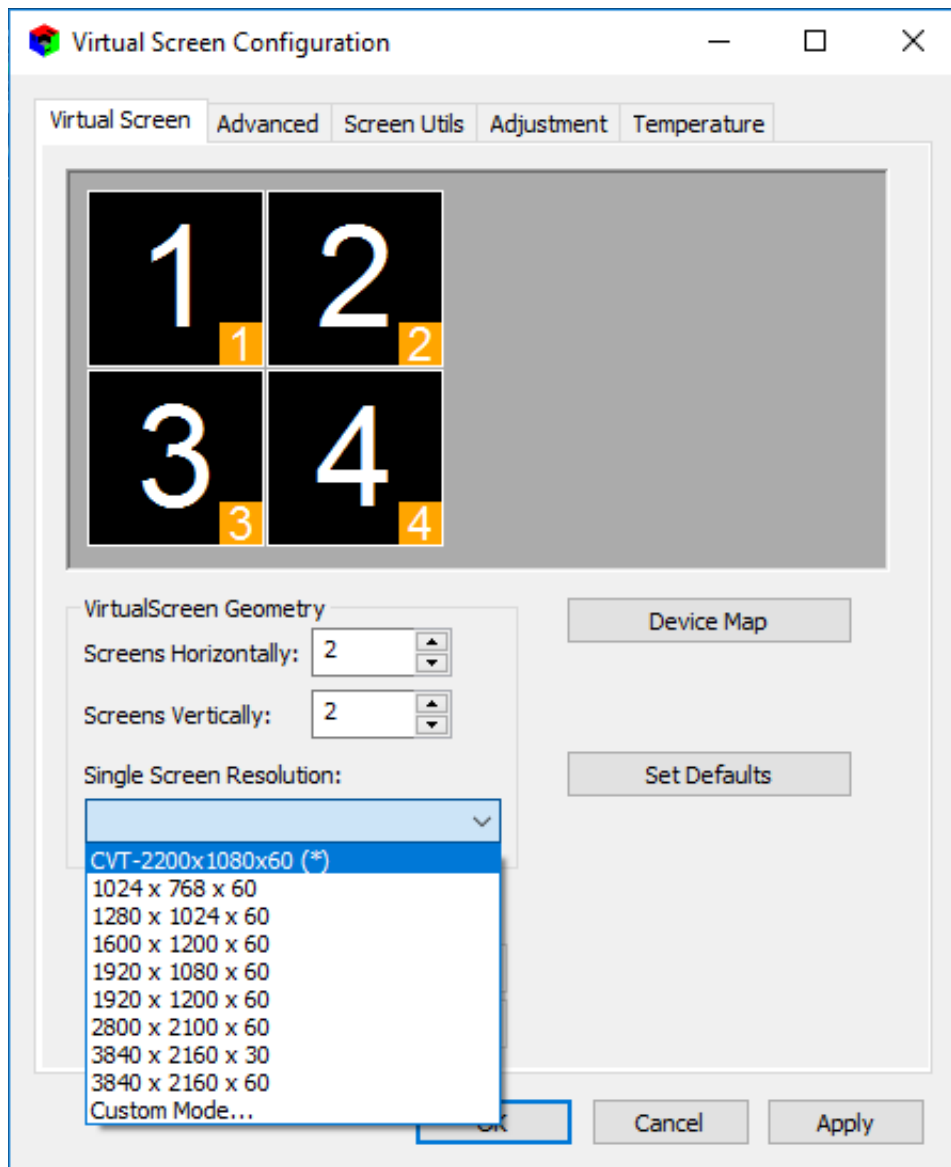


**Figure 4.77 - Defined Custom Modes List**

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7. Click **Close** above to be taken back to the VirtualScreen dialog box. The Custom Modes will appear in the **Single Screen Resolution** list followed by an asterisk, as shown below:



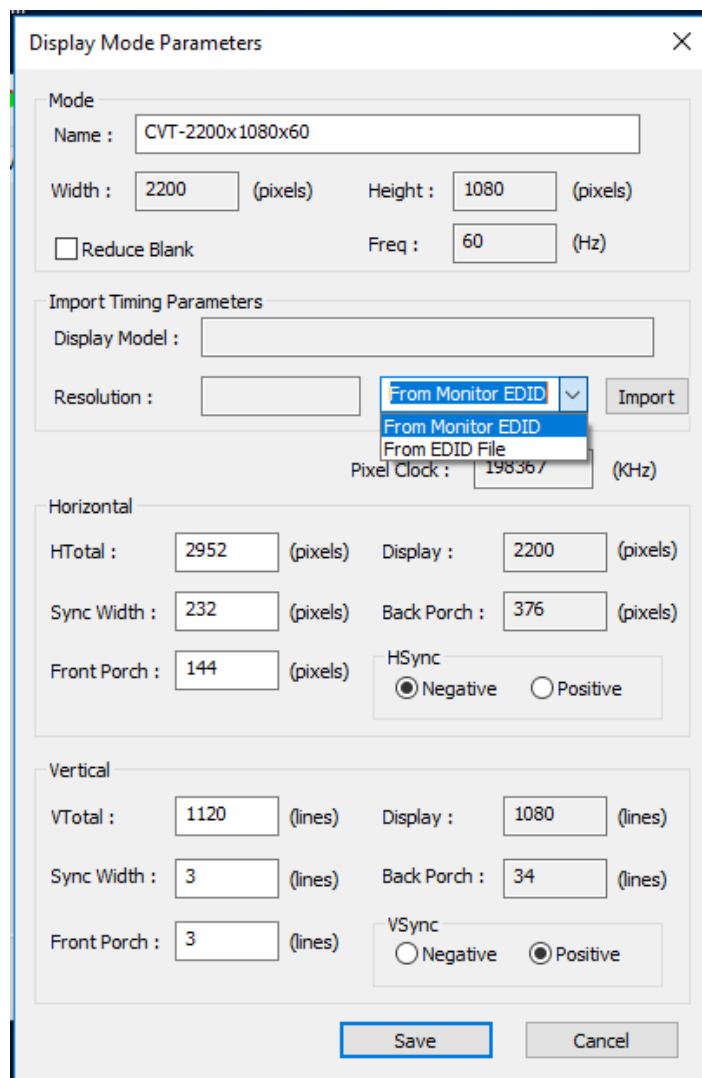
**Figure 4.78 - Custom Resolution shown with asterisk**

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### 4.22.3.2 Import EDID

If the displays do not respond to standard timing parameters, the correct parameters may be imported from the display EDID table.

1. Create a new **Custom Mode** as described at the beginning of this section.
2. On **Fusion Catalyst Windows 7** processors, click the **Import From EDID** button shown below to populate the Display Mode Parameters dialog fields from the selected Display Model. Note that the name of the Custom Mode has changed to "Dell U231HM 1920x1080".



**Figure 4.79 - Display Mode Parameters after Import from EDID**



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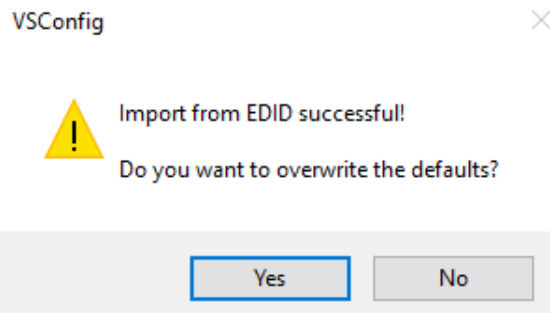
3. On **Catalyst Windows 10** processors, select the drop down **Import** button and click on **From Monitor EDID**.

---

**NOTE:** The Display **Horizontal** and **Vertical** of the imported EDID shown in Figure 4.46 still show 1920x1080@60, but **HSync** has changed from **Negative** to **Positive** and **HTotal** and **VTotol** are different.

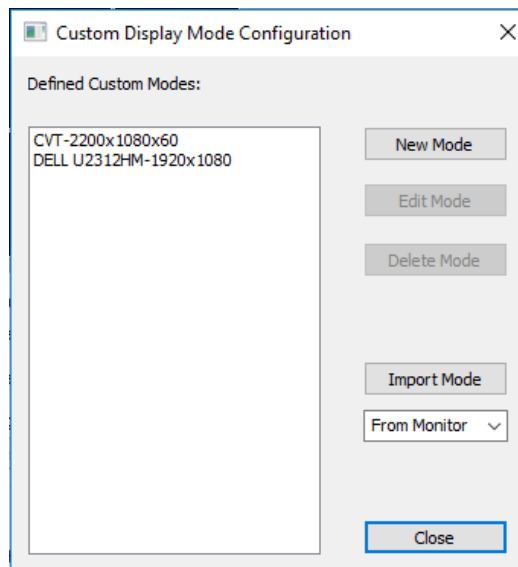
---

4. Click on **Save** to save the custom mode. The confirmation dialog box will appear.



**Figure 4.80 - Import from EDID Dialog**

5. Choose **Yes**, to accept the new EDID values.
6. When the new resolution is saved, it will appear in the Custom Modes list as shown below:

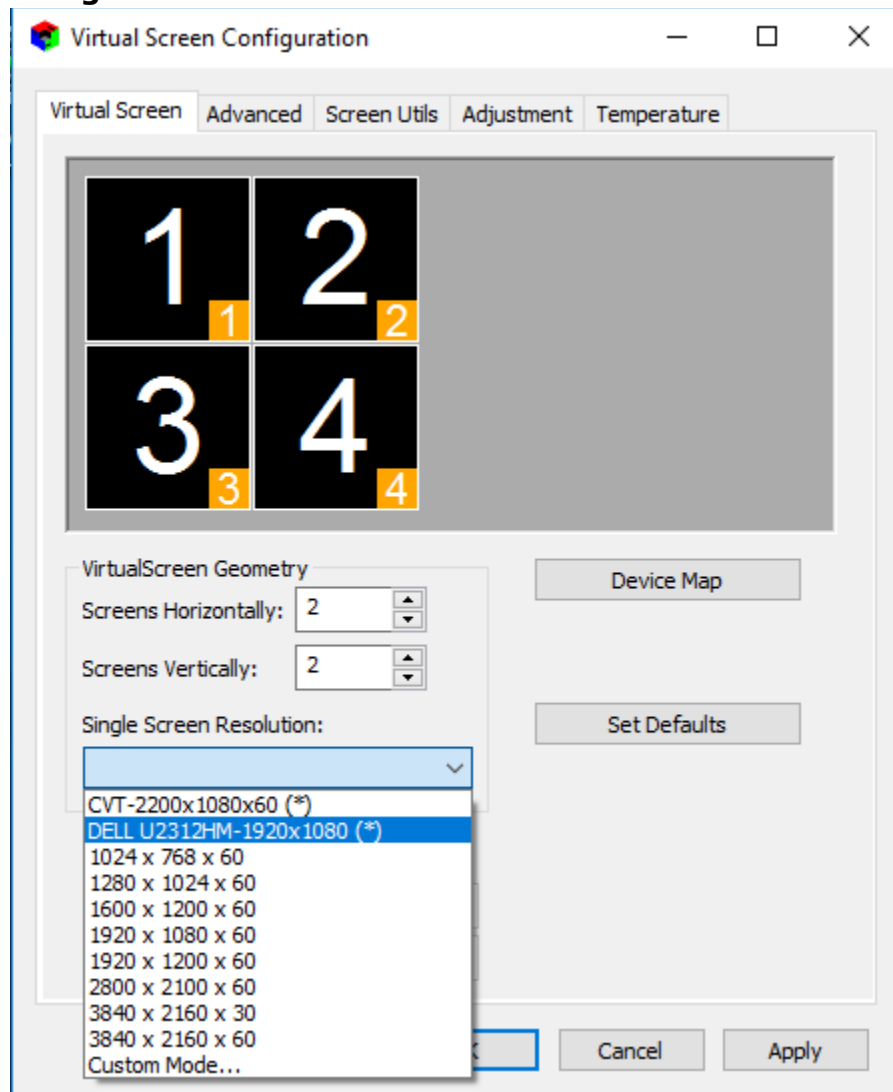


**Figure 4.81 - Custom Modes List with new Import**

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- Click **Close** above to be taken back to the **VirtualScreen** dialog box. Select the Custom ModeName (followed by an asterisk) in the **Single Screen Resolution** list .



**Figure 4.82 - Custom Resolution from Import from EDID**

- Proceed to [Section 4.22.4.8 Visual Effects](#).

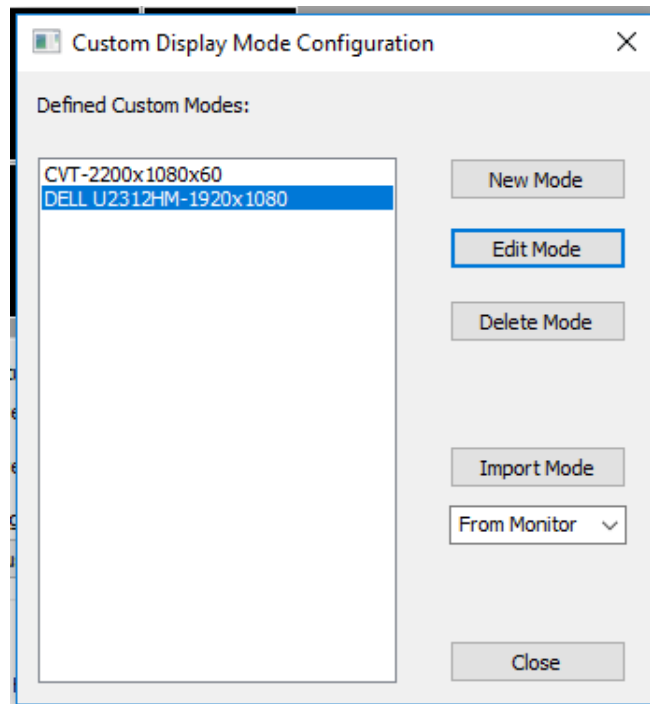
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### 4.22.3.3 Edit Custom Mode

To edit a **Custom Mode**:

1. Select the **Custom Mode** from the Display Modes list and click the **Edit Mode** button.



**Figure 4.83 - Edit Mode**

2. The **Display Mode Parameters** screen shown on Figure 4.50 will appear.
3. Enter the exact settings required by the display devices being used. The edit mode allows the basic settings to be refined, before editing a custom mode, to get a stable full screen display.
4. After saving the Custom Mode, it will appear in the Virtual Screen Configuration dialog in the Single Screen Resolution drop-down menu with an asterisk (\*) at the end.

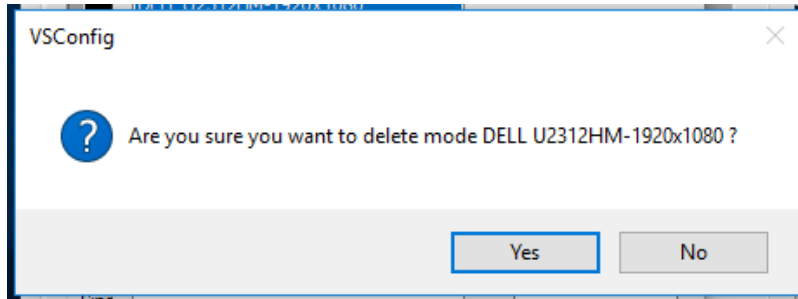
### 4.22.3.4 Delete Custom Mode

1. To delete a **Custom Mode**, use the **Delete Mode** button instead of the **Edit Mode** button in the above procedure.

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- Click Yes in the dialog box below:



**Figure 4.84 - Delete Custom Mode**

### 4.22.3.5 Parameter Listing

The Parameter listing for the Custom Display Mode is given below:

**Table 4. 10: Parameter Listing**

Parameters	Unit	Description
<b>Mode</b>		
Width	pixels	Width of visible pixels
Height	lines	Height of visible pixels
Freq	Hz	Vertical display frequency
Pixel Clock	KHz	The processing speed (pixels/sec) required for a given resolution and frequency.
<b>Horizontal</b>		
HTotal	pixels	Total pixels horizontal
HDisplay	pixels visible	Total visible pixels horizontal
HSyncWidth	pixels	Width of horizontal sync

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**Table 4. 10: Parameter Listing**

Parameters	Unit	Description
HBackPorch	pixels	Width of horizontal back porch
HFrontPorch	pixels	Width of horizontal front porch
Hsync (Positive-Negative)		Set Positive or Negative sync pulse
<b>Vertical</b>		
VTotat	lines	Total lines vertical
VDisplay	lines visible	Total visible lines vertical
VSynchWidth	lines	Width of vertical sync
VBackPorch	lines	Width of vertical back porch
VFrontPorch	lines	Width of vertical front porch
Vsync (Positive-Negative)		Set Positive or Negative sync pulse

### 4.22.4 Other VSConfig Options

#### 4.22.4.1 Factory Defaults

**Factory Defaults** clears **VSConfig** EDID settings and returns to a single screen mode with low resolution.

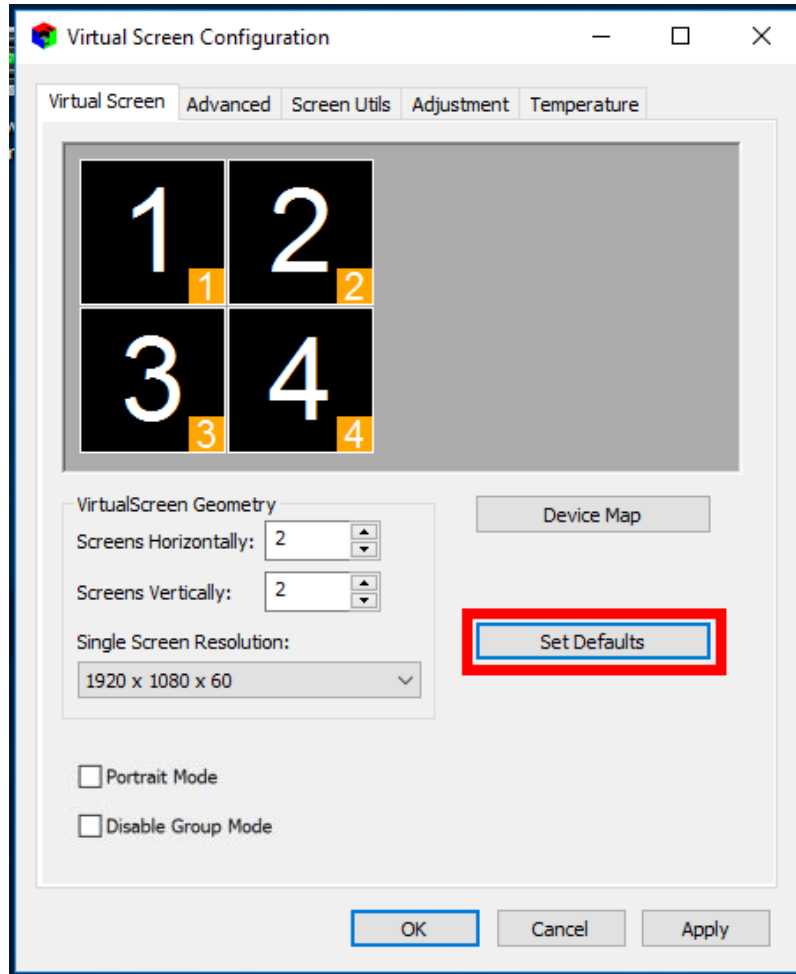
It retains previous **Landscape** or **Portrait** mode aspect ratio settings.

1. Go to **Start** → **All Programs** → **Canvas** → **VSconfig**

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2. Click on **Set Defaults** button on the **Virtual Screen Configuration** screen to revert all the settings to their original values.



**Figure 4.85 - Set Factory Defaults**

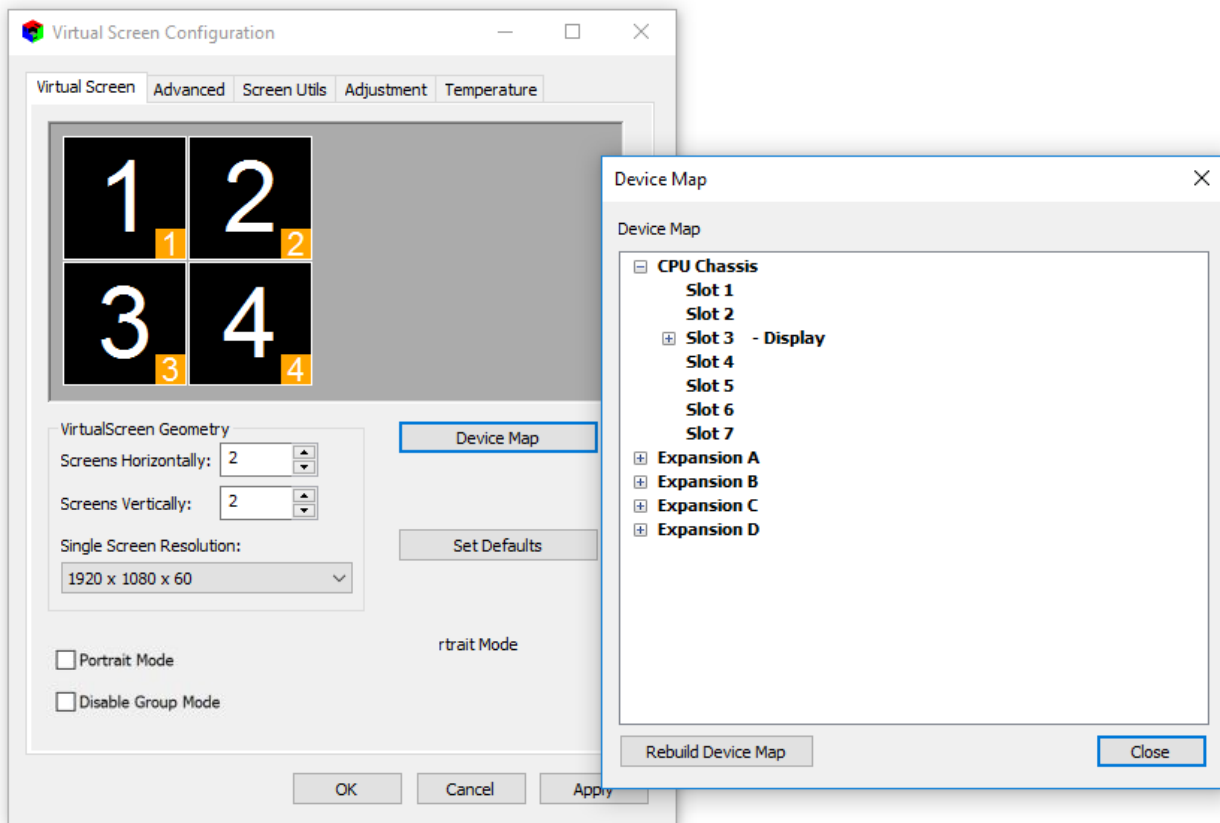
3. The following are the factory defaults in the **Virtual Screen** tab:
  - 1x1 wall
  - Default Resolutions:  
Windows 7:1280x1024, Windows 10:1920x1080

## 4—Canvas Installation and Setup

### 4.22.4.2 Device Map

In order for your system to operate properly, the Device Map must correlate to the hardware installed in the system. The following figure shows a representation of the **Device Map**.

1. Open the **Device Map** by starting the **VSConfig** dialog.
2. Click the **Device Map** button.



**Figure 4.86 - Device Map**

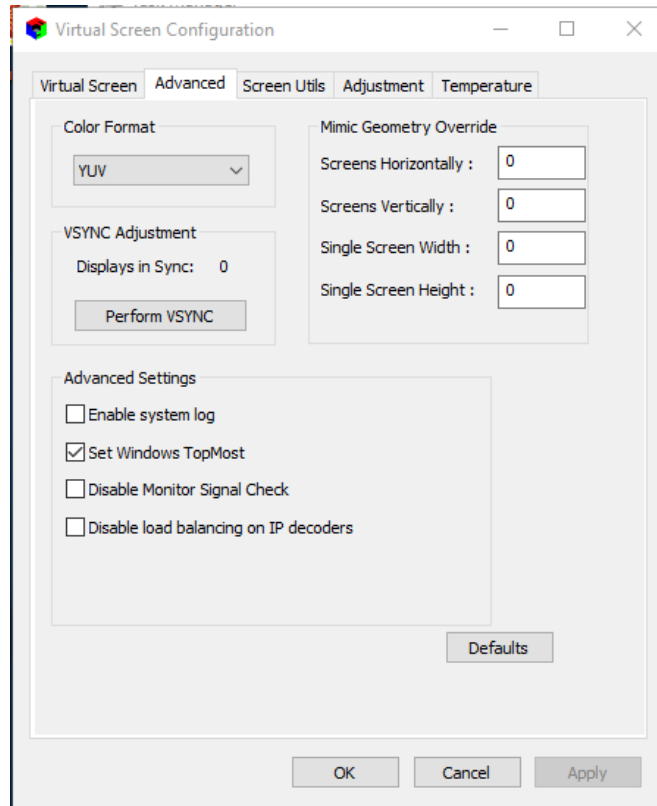
3. The **Device Map** dialog appears, displaying a tree-list of the system devices.
4. If the dialog does not describe your system properly, go to the **Windows Device Manager** and check that all Catalyst Devices are correctly installed.
5. After adding or removing I/O boards to/from a Catalyst, click on "Rebuild Device Map" to let the VirtualScreen re-order its internal slot table. The Catalyst will reboot after "Rebuild Device Map" is confirmed.

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### 4.22.4.3 Advanced Tab

Click on the **Advanced** tab. These settings should not be changed during normal operation.



**Figure 4.87 - Advanced Tab**

- Color Format:
  - RGB16 - Default: faster capture window frame rates.
  - RGB32 - Provides greater color depth
  - YUV16 - Windows 10 Default. Smaller graphics file sizes allows faster graphics data transfers. Not available in Windows 7.
- VSYNC Adjustment:
  - Perform VSYNC adjusts and aligns the timing of the wall displays.
- Enable System log:
  - Logs are required when troubleshooting system problems.
- Disable load balancing on IP decoders:
  - Causes all 4 channels on each decoder card to be used in order before allocating channels to the next decoder card.
- Set windows topmost:



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Keeps Canvas windows in front.

- Display Type:  
Windows 10 Processors use Auto Detect (EDID) only, so the option is not visible.

### 4.22.4.4 Mimic Geometry Override

This setting is used for LED panels or other types of special displays. If your wall is composed of such displays and you don't want users of the Mimic to be confused by screen boundary lines. Enter the native resolution of the displays in the Single Screen Width and Single Screen Height fields, and the number of horizontal and vertical displays. VSConfig will tell the Mimic to present a wall with these settings. The Mimic will look like this geometry override, but it is still acting as a wall of X,Y dimensions (e.g., 3x2, 4x4, etc.) from the Virtual Screen settings.

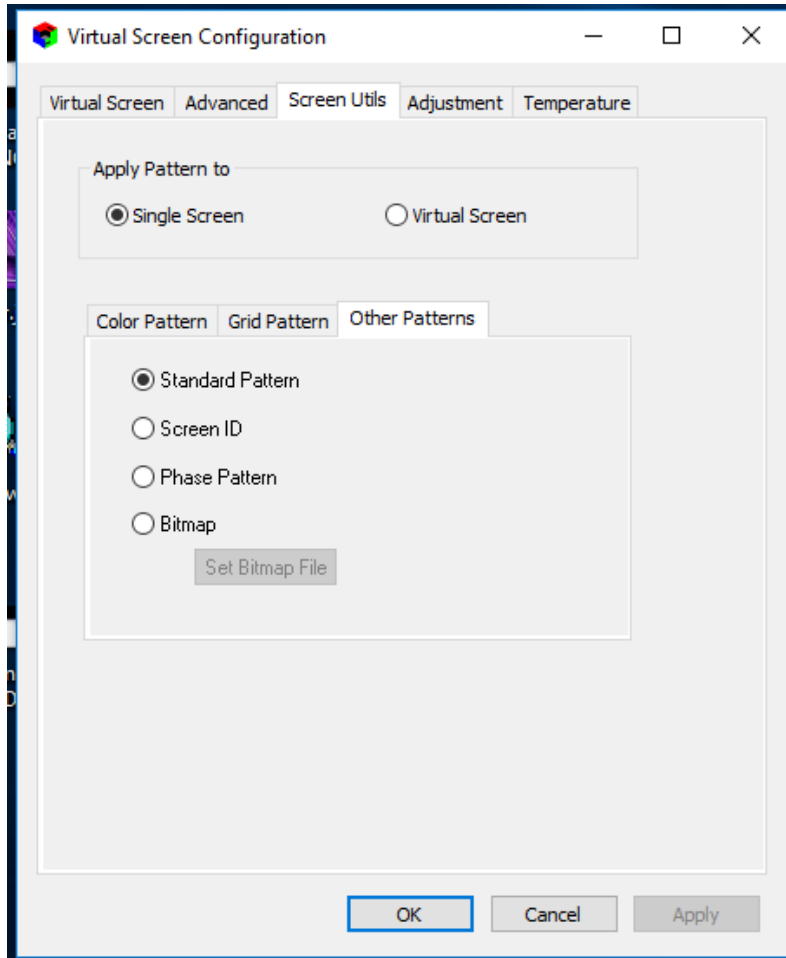
### 4.22.4.5 Screen Utils Tab

This tab allows video test patterns to be sent to the wall. Patterns include color bars, circles, grids, and screen identification. User bitmaps such as company logos can also be selected.

- If the pattern is applied to the Single Screen, the pattern repeats on each monitor.
- If the pattern is applied to the Virtual Screen, the pattern is spread over the entire wall.

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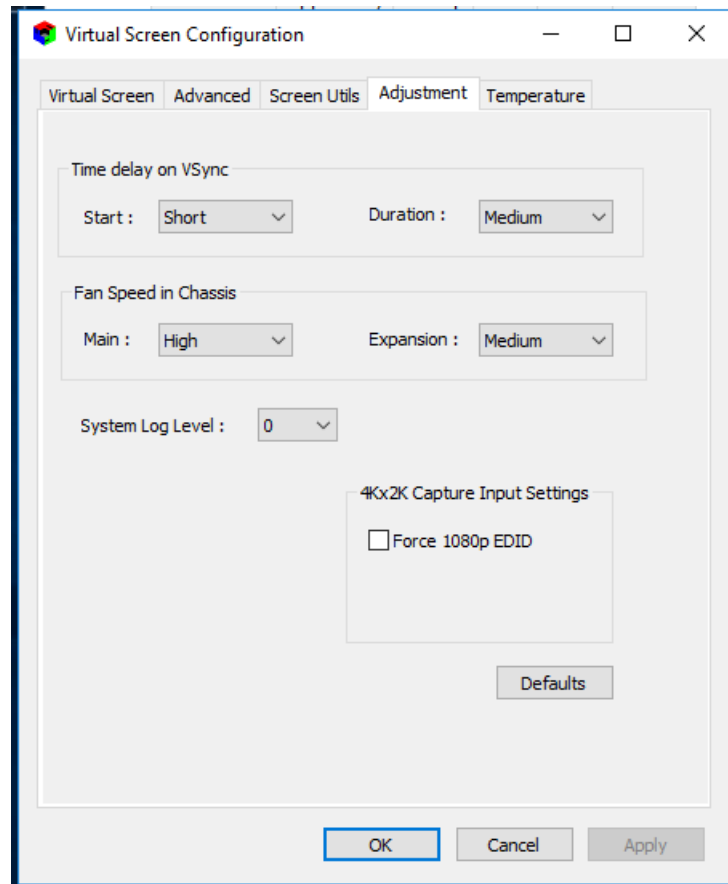
**Figure 4.88 - Screen Utilities Tab**

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### 4.22.4.6 Adjustment tab

The **Adjustment** tab is present on Windows 10 processors only. Defaults are shown.



**Figure 4.89 - Adjustment tab**

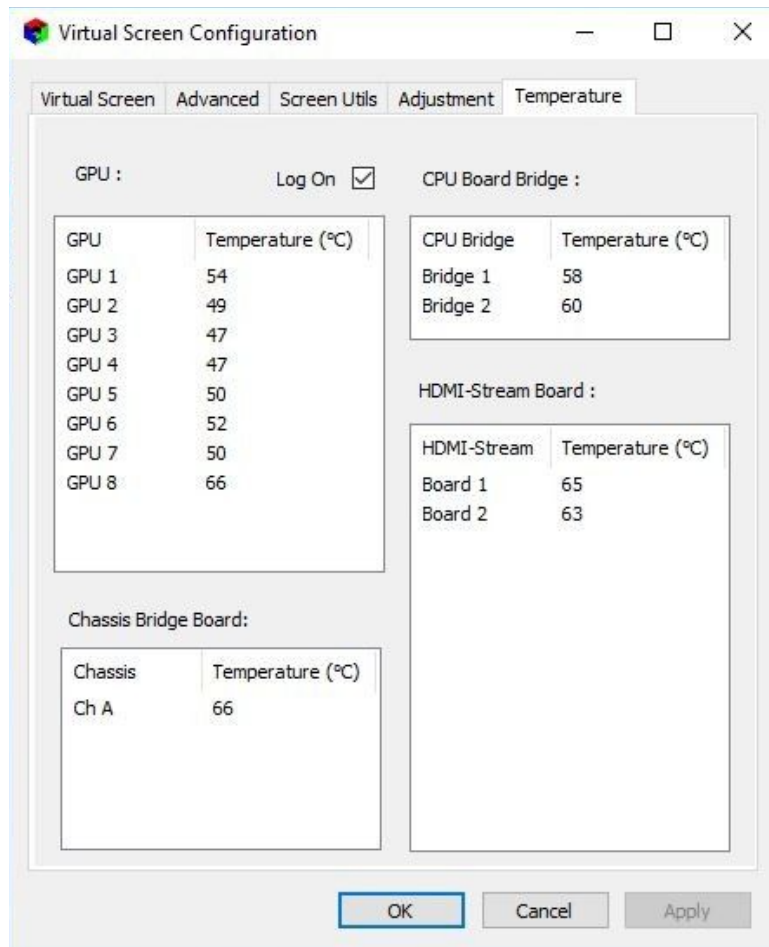
- Time delay on VSync  
Start: Sets the Delay before starting VSync  
Duration: Sets the duration of the VSync operation
- Fan Speed in Chassis  
Main: Sets the speed of the Main chassis fans  
Expansion: Sets the speed of the Expansion chassis fans
- System Log Level:  
Used for debugging only. Defines log type.
- Detect Displays  
Detects all of the connected displays.
- Capture Input Settings  
Option to override resolution

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### 4.22.4.7 Temperature Tab

This tab shows information about temperature across all the chassis.



**Figure 4.90 - Temperature tab**

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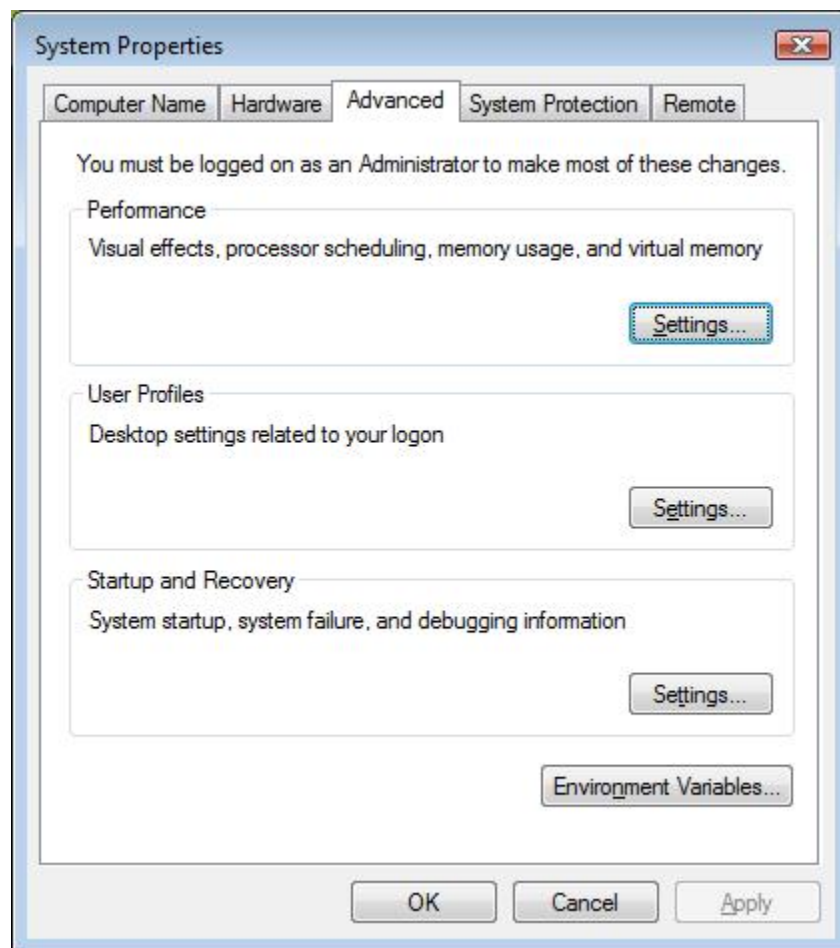
---

### 4.22.4.8 Visual Effects

The following settings are required for optimal Catalyst performance in Windows 7.

Steps to do the settings:

1. Open **My Computer** properties dialog.
2. Select **Advanced System Settings**. The **System Properties** dialog appears as shown below.



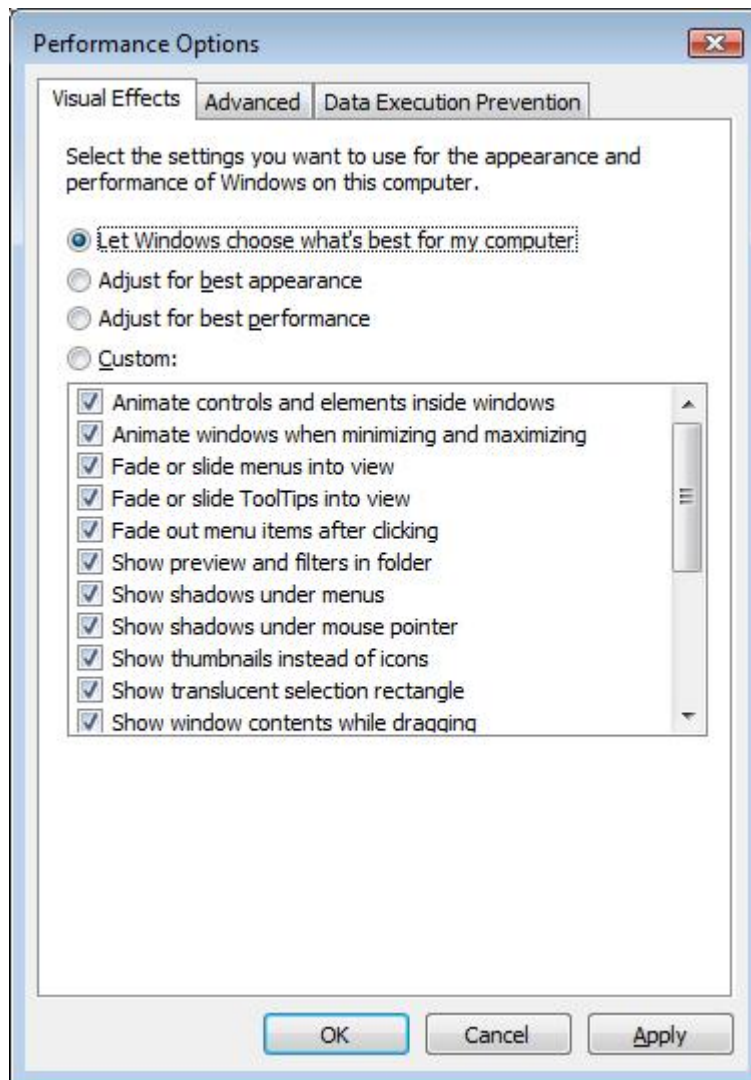
**Figure 4.91 - Advanced System Settings**

3. Click on the **Settings** button in the Performance group.

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The **Performance Options** dialog appears.



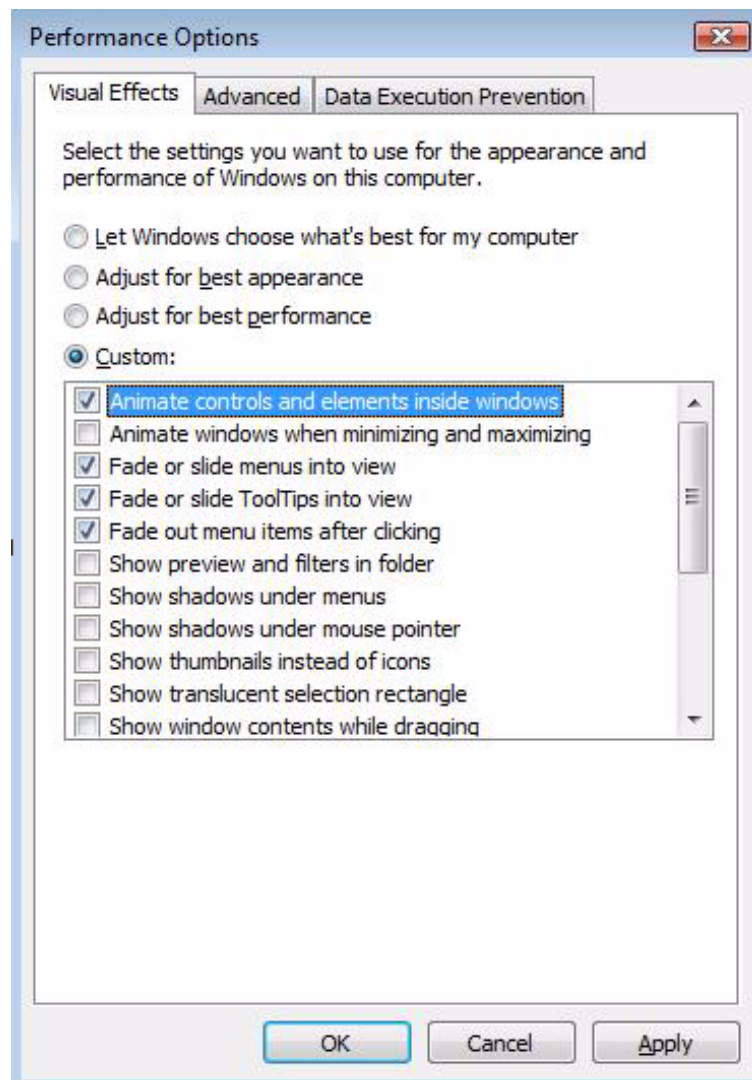
**Figure 4.92 - Performance Options Dialog**

4. Select the **Adjust for best performance** option to un-check the entire list.
5. Select the **Custom** option.

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6. In the **Custom** item list, select (check) the following items, as shown on figures below:
- Animate controls and elements inside windows
  - Fade or slide menus into view
  - Fade or slide ToolTips into view
  - Fade out menu items after clicking

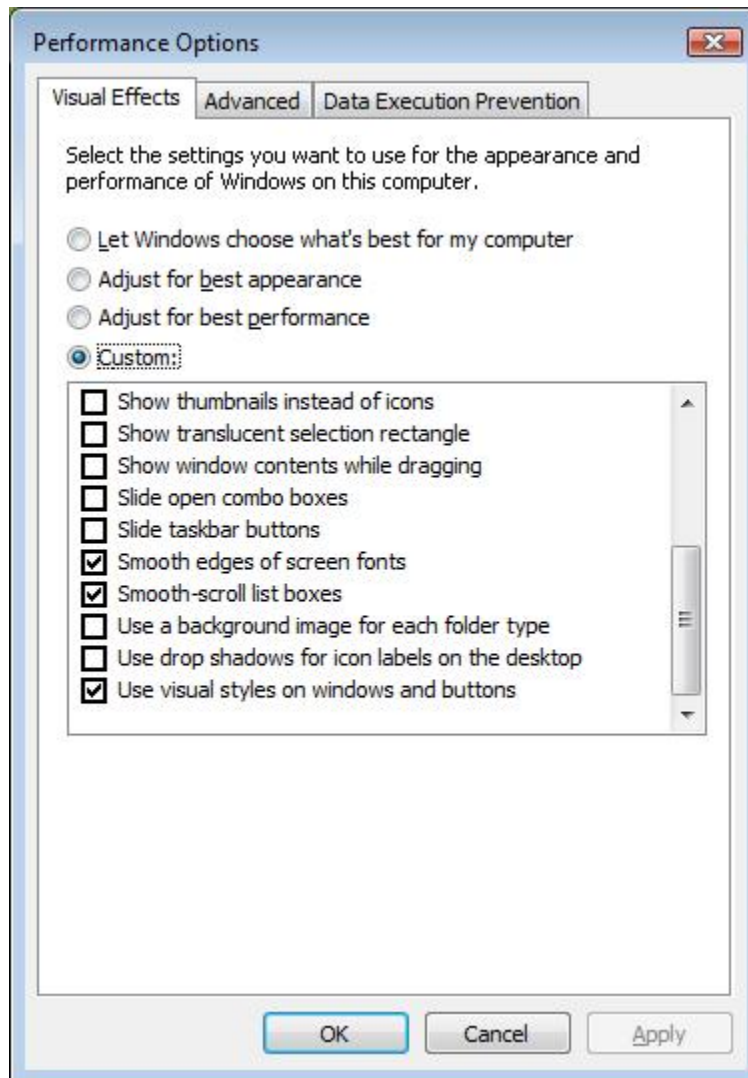


**Figure 4.93 - Custom Items List**

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7. Scroll down on the list and select the following items:
  - Smooth edges of screen fonts
  - Smooth scroll list boxes
  - Use visual styles on windows and buttons



**Figure 4.94 - Custom Items List (continued)**

8. Click **Apply** and then **OK**.



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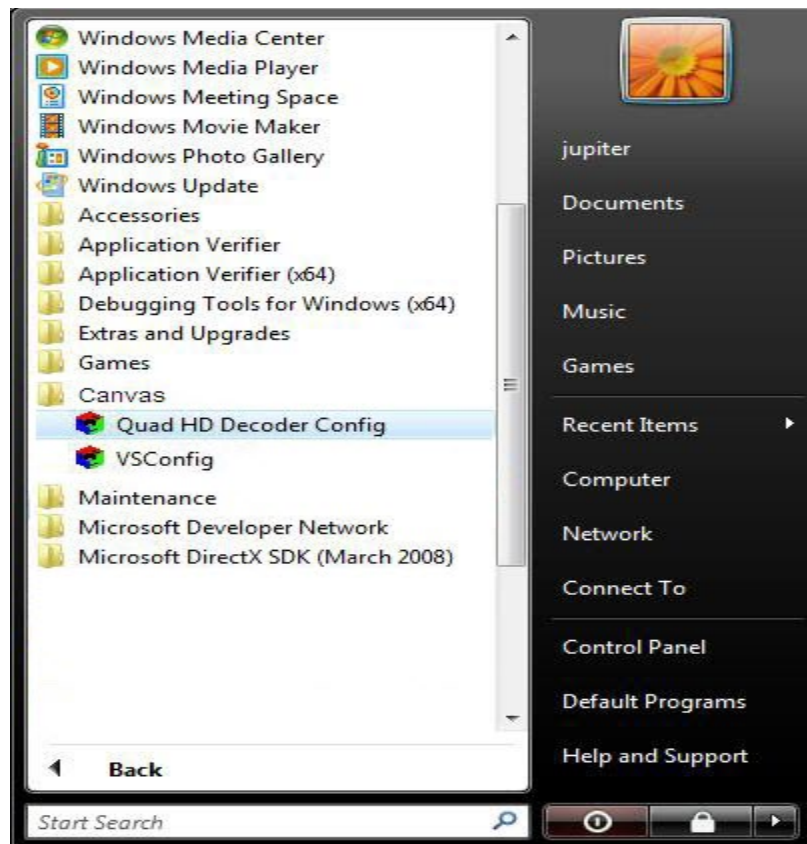
---

### 4.22.5 Configuring Quad HD Decoder

The following are important notes for configuring the Quad HD Decoder:

1. Do not have Quad HD Decoder windows running on the wall when changing decoder settings.
2. Ensure that all Ethernet cables are plugged-in before starting the system. This allows the Quad HD Decoder channels to receive valid IP addresses if configured for DHCP.
3. When a new Quad HD Decoder window is created, the system acquires the next available Quad HD Decoder channel. A channel is considered available under the following conditions—a valid IP Address defined and the Link Status table shows **Yes** in the row for that channel.
4. Start up the Quad HD Decoder Configuration application from the start menu:

**Start Menu—>All Programs—>Canvas—>Quad HD Decoder Config**

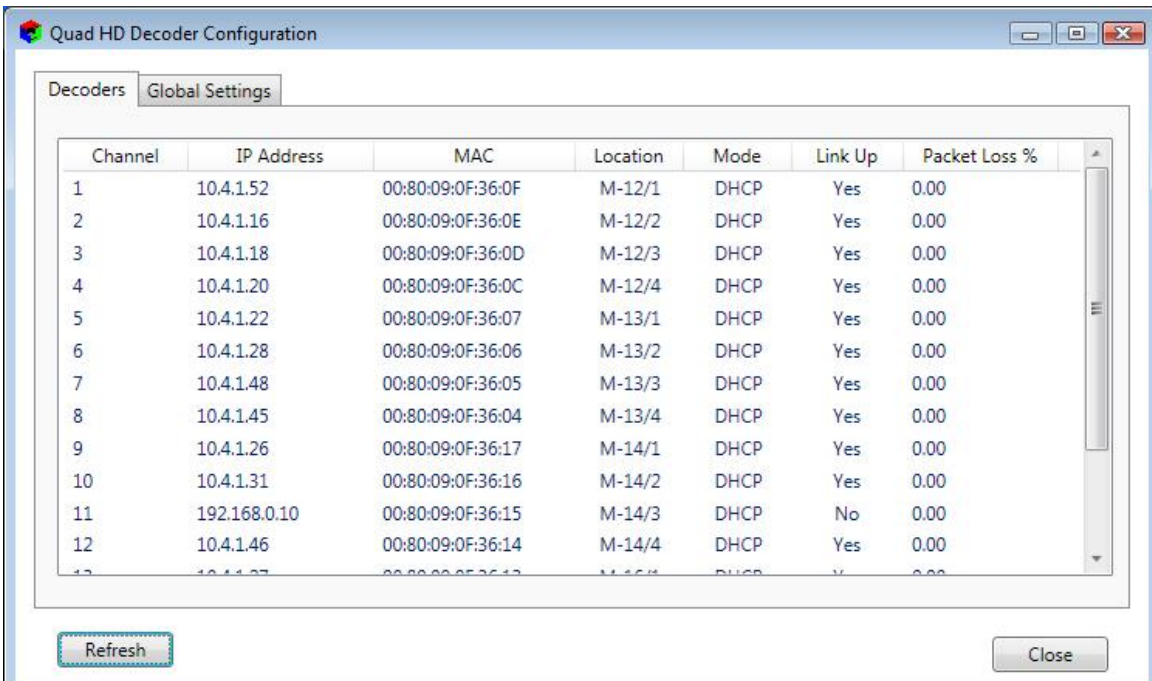


**Figure 4.95 - Quad HD Decoder Configuration—Start Menu**

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### 4.22.5.1 Decoders Tab

The **Quad HD Decoder Configuration** dialog opens to the **Decoders** tab as shown in the following figure:



Channel	IP Address	MAC	Location	Mode	Link Up	Packet Loss %
1	10.4.1.52	00:80:09:0F:36:0F	M-12/1	DHCP	Yes	0.00
2	10.4.1.16	00:80:09:0F:36:0E	M-12/2	DHCP	Yes	0.00
3	10.4.1.18	00:80:09:0F:36:0D	M-12/3	DHCP	Yes	0.00
4	10.4.1.20	00:80:09:0F:36:0C	M-12/4	DHCP	Yes	0.00
5	10.4.1.22	00:80:09:0F:36:07	M-13/1	DHCP	Yes	0.00
6	10.4.1.28	00:80:09:0F:36:06	M-13/2	DHCP	Yes	0.00
7	10.4.1.48	00:80:09:0F:36:05	M-13/3	DHCP	Yes	0.00
8	10.4.1.45	00:80:09:0F:36:04	M-13/4	DHCP	Yes	0.00
9	10.4.1.26	00:80:09:0F:36:17	M-14/1	DHCP	Yes	0.00
10	10.4.1.31	00:80:09:0F:36:16	M-14/2	DHCP	Yes	0.00
11	192.168.0.10	00:80:09:0F:36:15	M-14/3	DHCP	No	0.00
12	10.4.1.46	00:80:09:0F:36:14	M-14/4	DHCP	Yes	0.00

**Figure 4.96 - Quad HD Decoder Configuration Dialog**

### 4.22.5.2 Quad HD Decoder Configuration Dialog

The **Decoders** tab presents the status of the individual IP decoder channels. The channel information is presented in the following columns:

- Channel: Lists the channel number
- IP Address: IP address of channel
- MAC: Displays the MAC address of the channel
- Location: The slot number in each chassis, identifying the decoder card placement. M = Main chassis, A = First Expansion, B = Second Expansion.
- Mode: Indicates whether the mode is DHCP or Static.
- Link Up: Denotes the link status. This information is only created at system boot. Yes indicates proper cable connection. This is the same status as the Link-up LED on the RJ45 of the associated channel.
- Packet Loss: Reports percentage (%) of packet loss for the RTSP/

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RTP stream types. Calculation is based upon the running total of packet loss detected over the duration of the RTSP/RTP stream play out. Packet loss will cause degradation in decoder performance depending on encoder format and bandwidth utilization. Packet Loss can affect the appearance of the stream.

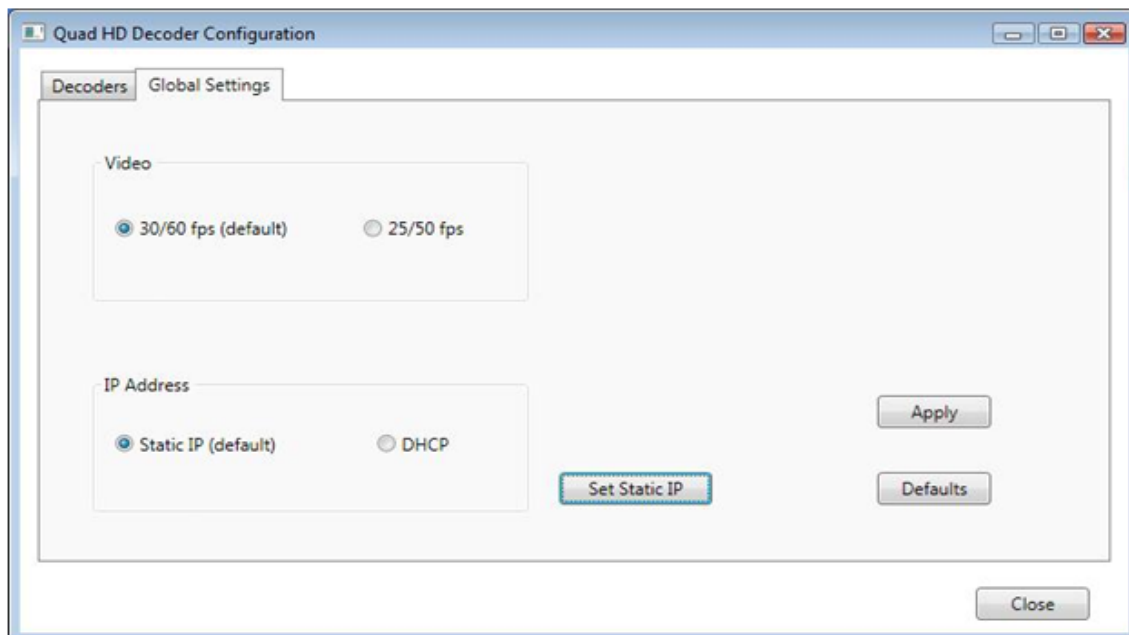
- Click Refresh to update information.

### 4.22.5.3 Global Settings Tab

The **Global Settings** tab sets the system-wide settings for all decoder channels. This tab displays the chosen **Video Frame Rate** and **IP Address** mode. Changes made in the **Global Settings** tab affect all the channels.

Depending on the video format of the encoders, select the appropriate frames per second (fps) between 30/60 or 25/50 fps. To change the video frame rate:

1. Click the desired frame rate:
  - 30/60 fps or
  - 25/50 fps
2. Click **Apply** to save and apply the changes. This action resets all the Quad HD Decoder boards in the system.



**Figure 4.97 - Global Settings Tab**

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Selecting the **Static IP** (default) option in the IP Address section sets all decoders to Static IP regardless of individual decoder settings. Refer to [Section 4.103 Network Configuration—Static IP Mode on page 116](#) for more information.

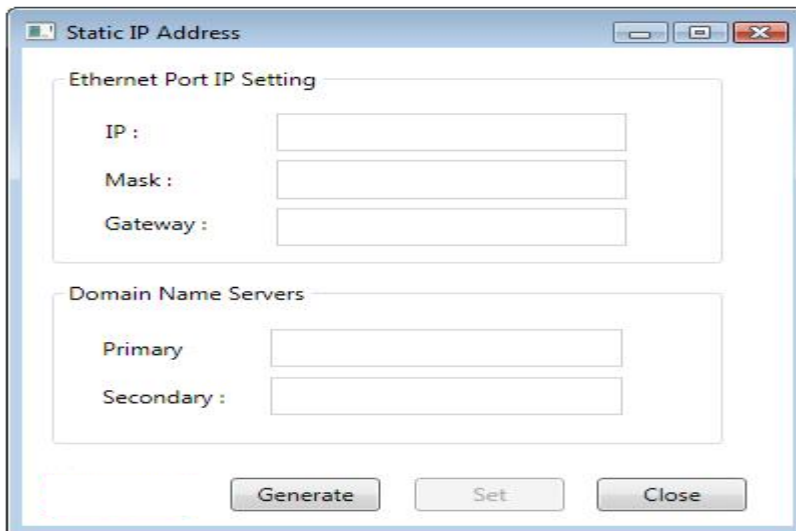
Click **Defaults** to reset all the channels to the factory default Video and IP Address settings. This will override all of the current individual channel settings. The default selections are:

- 30/60 fps for Video
- Static IP for IP Address (192.168.0.10 with Mask:255.255.0.0)The Set Static IP button has the following features:

Click on the **Set Static IP** to bring up the **Static IP Address** dialog.

The **Set Static IP** button has the following features:

- The button will be enabled when Static IP (default) is selected.
- The button will be disabled when DHCP is selected.
- Click this button to bring up the Static IP Address dialog.



**Figure 4.98 - Static IP Address Dialog**

The **Static IP Address** dialog is used to generate static IP addresses automatically according to the user's input.

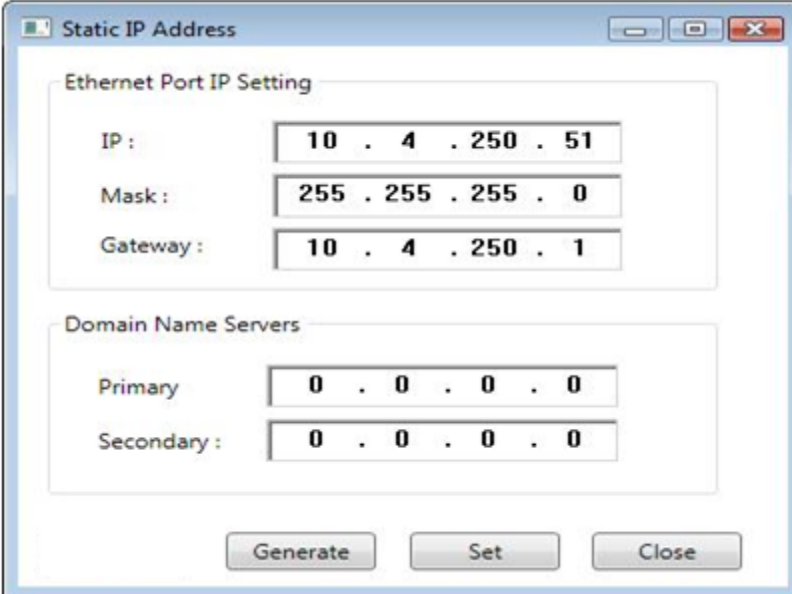
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### 4.22.5.4 Generating Static IP Addresses

Perform the following tasks to automatically generate Static IP Addresses:

1. Enter the starting Static IP information in the following fields:
  - IP address
  - Mask
  - Gateway
  - Primary DNS
  - Secondary DNS
2. Click the **Generate** button, to automatically generate the Static IPs for the rest of the channels for all of the Quad HD Decoder cards in the system. The generation process is immediate and returns no feedback.



**Figure 4.99 - Generate Static IP Address**

3. Click the **Set** button to save the Static IP information. Each decoder channel requires a minute or more of time to be configured.

---

**Note** After you enter the first Static IP information, every subsequent entry will be incremented by 1. For instance, if the first IP was: 10.4.1.250 then the next will be 10.4.1.251

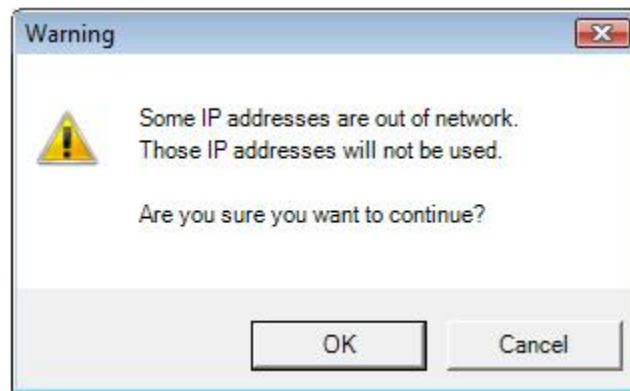
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and so on. Once the number reaches 255, the next increment will be: 10.4.2.000.

---

If the generated IP is out of network according to the Network Mask, a warning message will be issued.

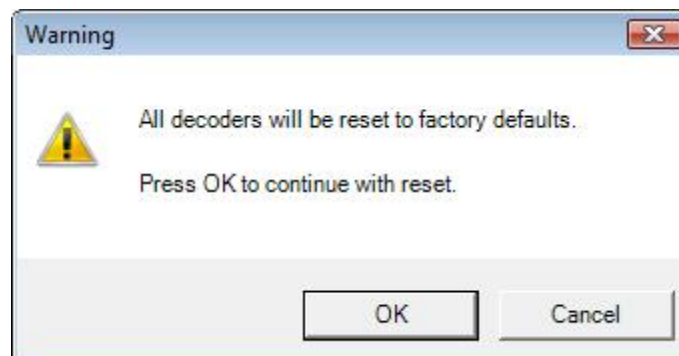


**Figure 4.100 - Warning Message**

- Click Cancel so that Static IP will not be generated
- Click OK so that out-of-network IPs will not be generated

### 4.22.5.5 Defaults Button

When the **Defaults** button is selected, the following message appears about the factory level reset of the decoders:

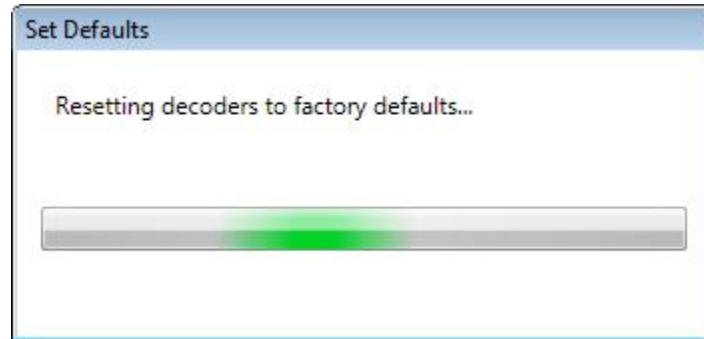


**Figure 4.101 - Factory Reset Confirmation**

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After clicking **OK**, a progress bar will appear.



**Figure 4.102 - Factory Default Progress Bar**

### 4.22.5.6 Channel Settings

Clicking on any of the Channels listed in [Figure 4.96](#), **Quad HD Decoder Configuration Dialog**, opens the **Settings** dialog for that channel as shown below in [Figure 4.70](#) and [Figure 4.71](#).

### 4.22.5.7 Network Configuration Tab

This tab displays the network configuration of a channel. The changes made in this tab apply to a specific channel. Running **Static IP** mode eliminates potential network problems with DHCP servers and unreliable IP Address allocation.

There are two possible network settings:

- Static IP (the default selection), or
- DHCP

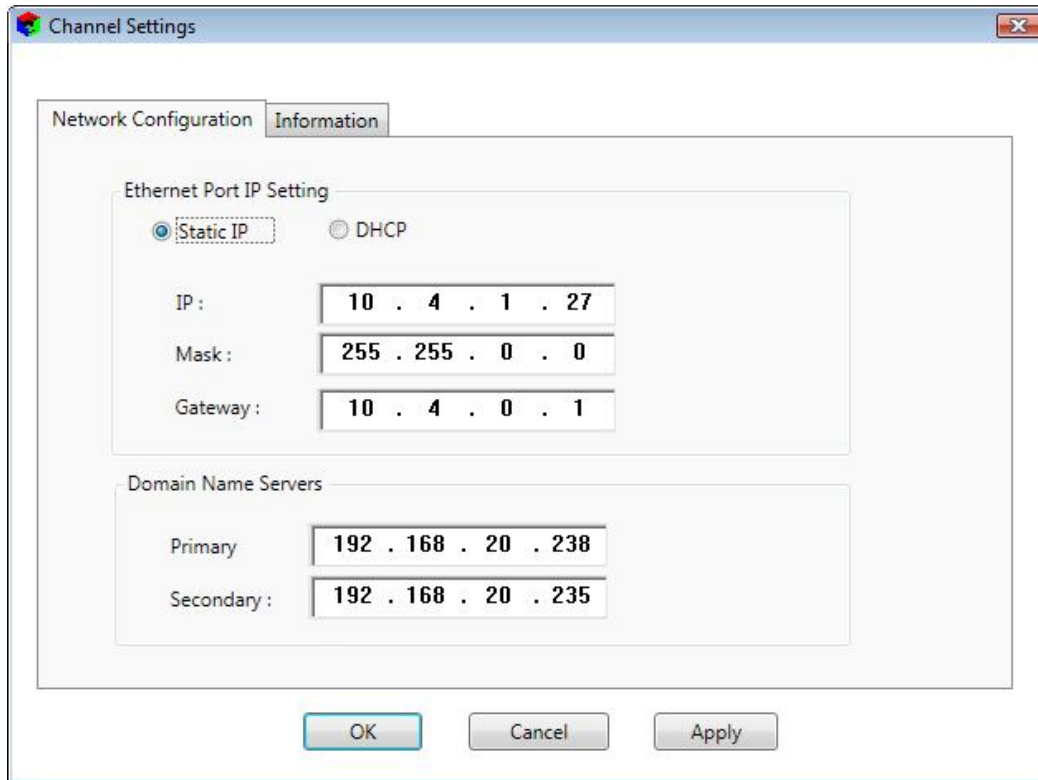
To configure in Static mode:

To set the Static IP mode, perform the following:

1. Select the **Static IP** radio button.
2. Enter valid IP Address, Subnet Mask, Gateway Address, and DNS Addresses. The DNS addresses are optional and can be set to **0**. Enter Primary and/or Secondary Domain Name Server IP Address to resolve Domain Names. Invalid DNS entries will not return an error message or indicate that the entry is invalid. However, these entries (such as, **256.256.256.256**) are ignored by the system.

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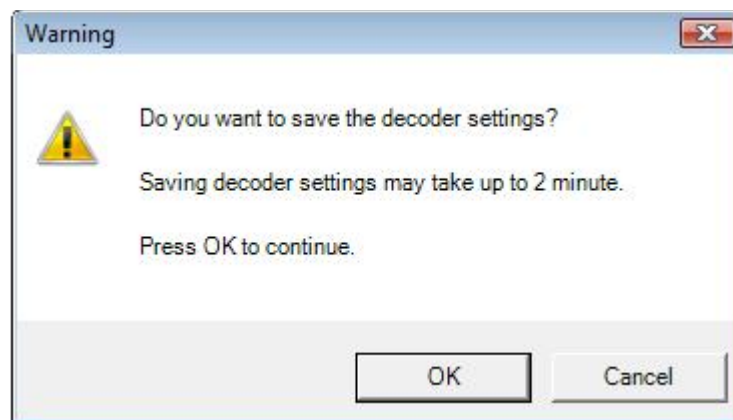
---



**Figure 4.103 - Network Configuration—Static IP Mode**

3. Click **Apply** to save the changes.

The following warning appears when changes are made to the configuration of the Quad HD Decoder channel.



**Figure 4.104 - Quad HD Decoder Reset Confirmation**

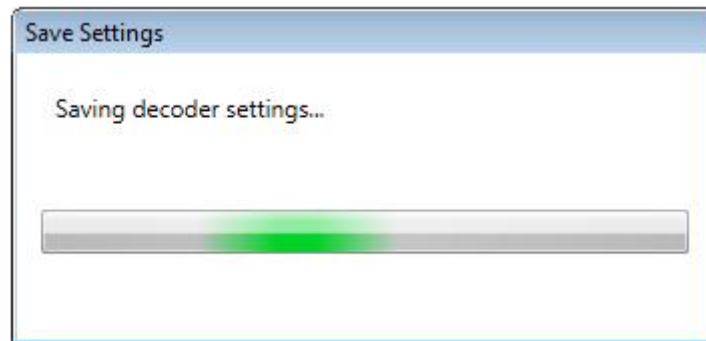


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4. Click **OK** to confirm the changes and continue.

A progress bar dialog will appear as follows:



**Figure 4.105 - Progress Bar**

Restart the system when all the decoder channels have been set up.

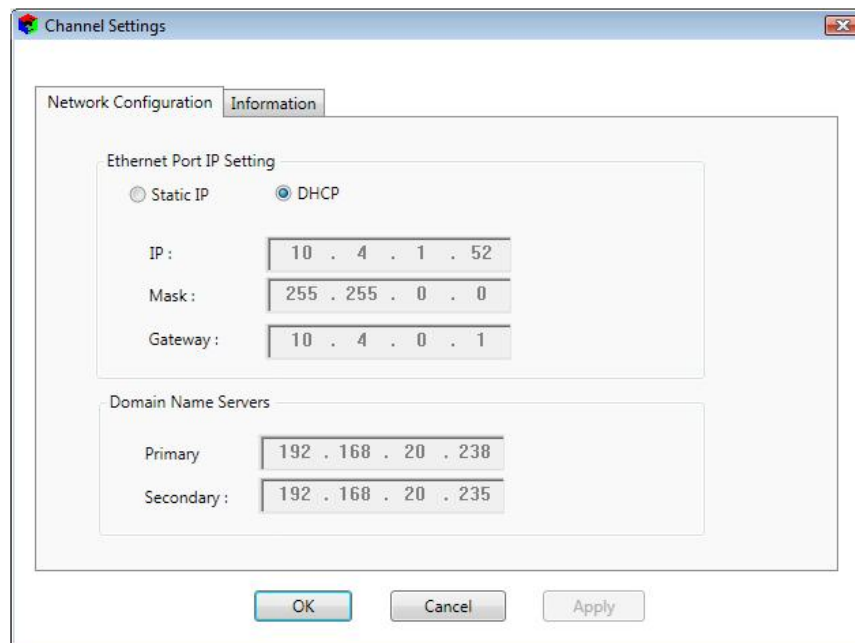
---

**Note** Static settings are saved in the IPDecoder board and not in Canvas Virtual Screen. This makes troubleshooting easier when information about the settings moves with the board.

---

To configure in DHCP mode:

1. Select the **DHCP** radio button.



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### Figure 4.106 - Network Configuration—DHCP Mode

2. Click **Apply** to save the changes. There is no need to specify **Domain Name Servers (DNS)** since DHCP will automatically determine them.

A progress bar dialog will appear similar to [Section 4.102 "Factory Default Progress Bar"](#).

---

**Caution** Quad HD Decoder channels with DHCP enabled negotiate an IP address with the DHCP server during the startup process of the Fusion Catalyst System. If the Quad HD Decoders fail to detect the DHCP server, those channels will be disabled until they are manually made to acquire an address or until the next system restart.

---

### 4.22.5.8 Replacing Quad HD Decoder Board

When replacing an Quad HD Decoder board, the new board needs to be configured.

Static IP information is stored in the Quad HD Decoder board, not in Canvas Virtual Screen. Therefore, the replacement board will **NOT** automatically inherit this information. Hence, a new board requires the old board's configuration values to be entered manually.

### 4.22.5.9 Troubleshooting

On Quad HD Decoder Config startup, if a decoder channel does not respond, the following message appears.

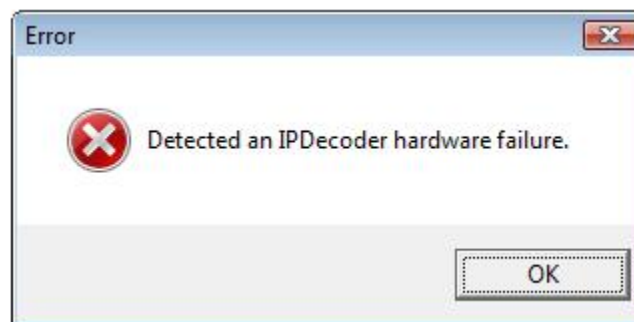


Figure 4.107 - Hardware Failure Error Message

The message indicates a possible hardware failure. Run a Diagnostic to determine which card has failed. The Diagnostic file is on the Canvas

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Install flash drive under:  
Utilities/CatalystDiagnostic/CatalystSADiags\_xx\_xx\_xxx.iso.

This ISO file must be copied onto a bootable drive. It boots into a LINUX environment and does not affect the system configuration.

### 4.22.6 IP Decoder Board Config

**IP Decoder Board Config** tool can be used to configure IP Decoder boards in a XL system. With the board. This tool is used to configure a **IP Decoder** board as either **HDMI** or a **Streaming** board. To access **IP Decoder Board Config**:

Start Menu—>All Programs—>Canvas—>IP Decoder Board Config

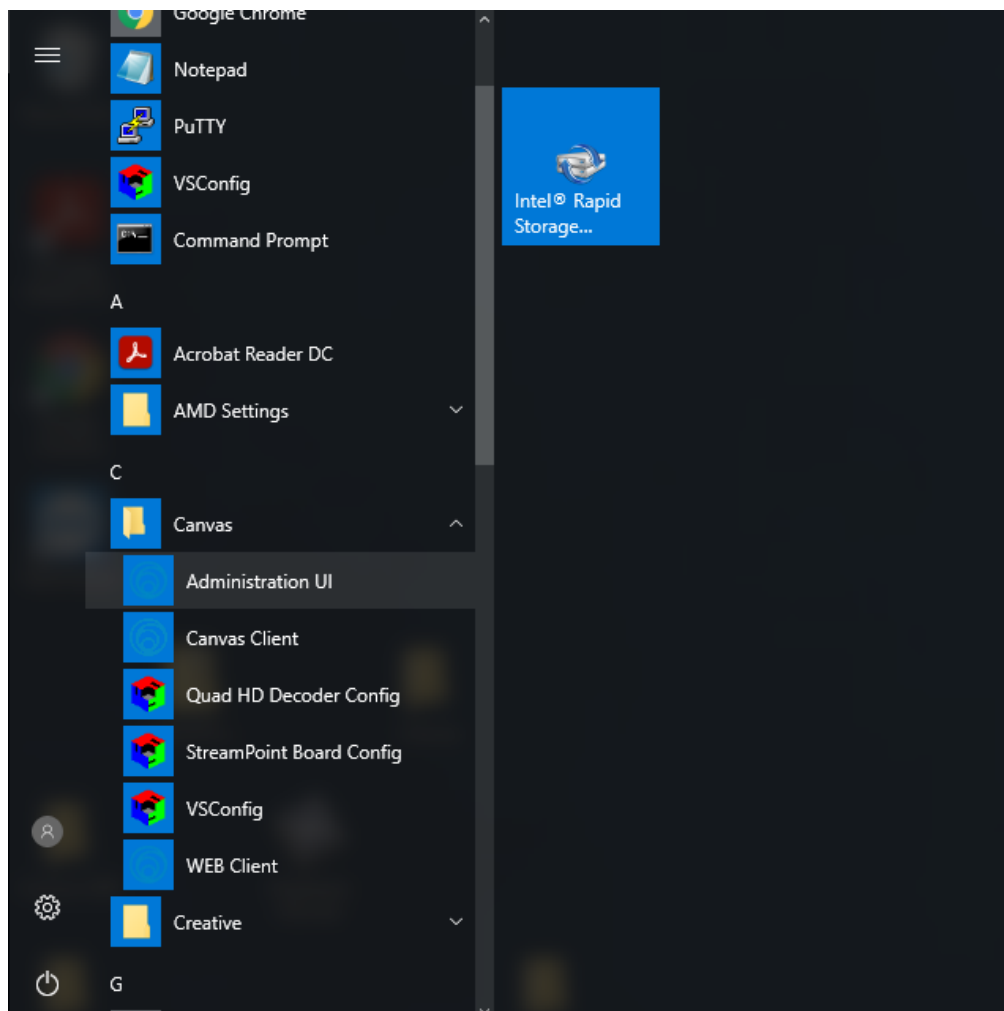


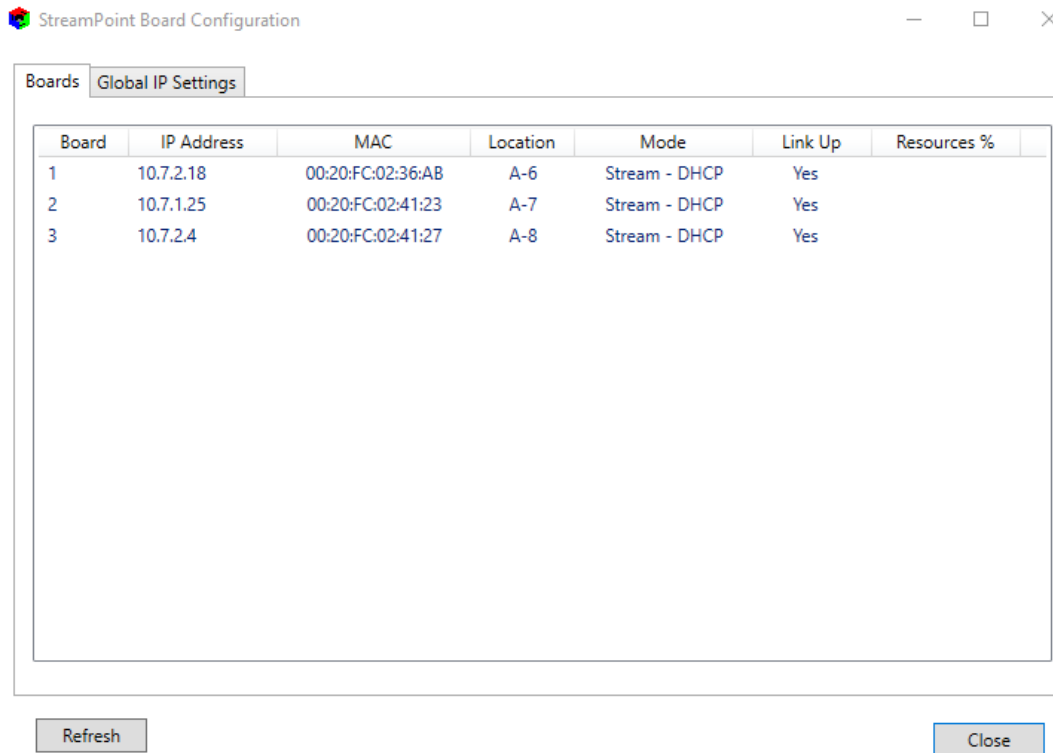
Figure 4.108 - Start Screen

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### 4.22.6.1 Boards Tab

The **IP Decoder Board Config** dialog opens to the **Boards** tab as shown in the following figure:



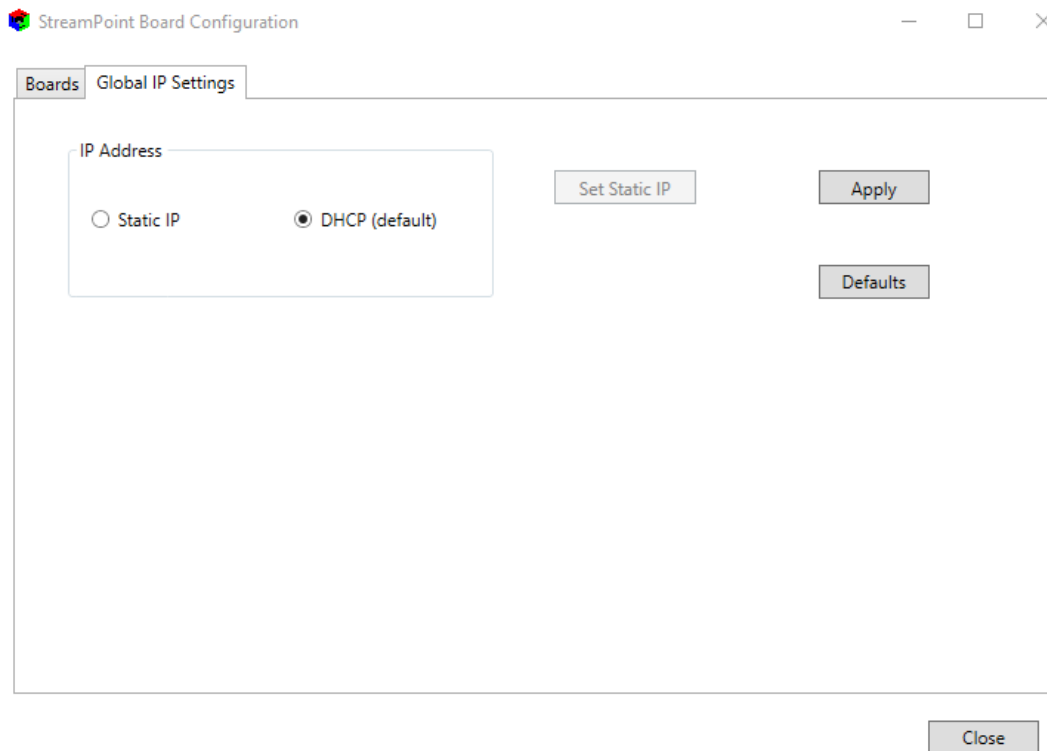
**Figure 4.109 - Boards**

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### 4.22.6.2 Global IP Settings Tab

The **Global Settings** tab sets the system-wide settings for all board channels. This tab displays **IP Address** mode. Changes made in the **Global Settings** tab affects all the channels.



**Figure 4.110 - Global IP Settings**

There are two different **IP Address** modes. The default is set to **DHCP**. When changing to **Static IP**, click on **Static IP** and then click **Apply**.

### 4.22.6.3 Network Configuration Tab

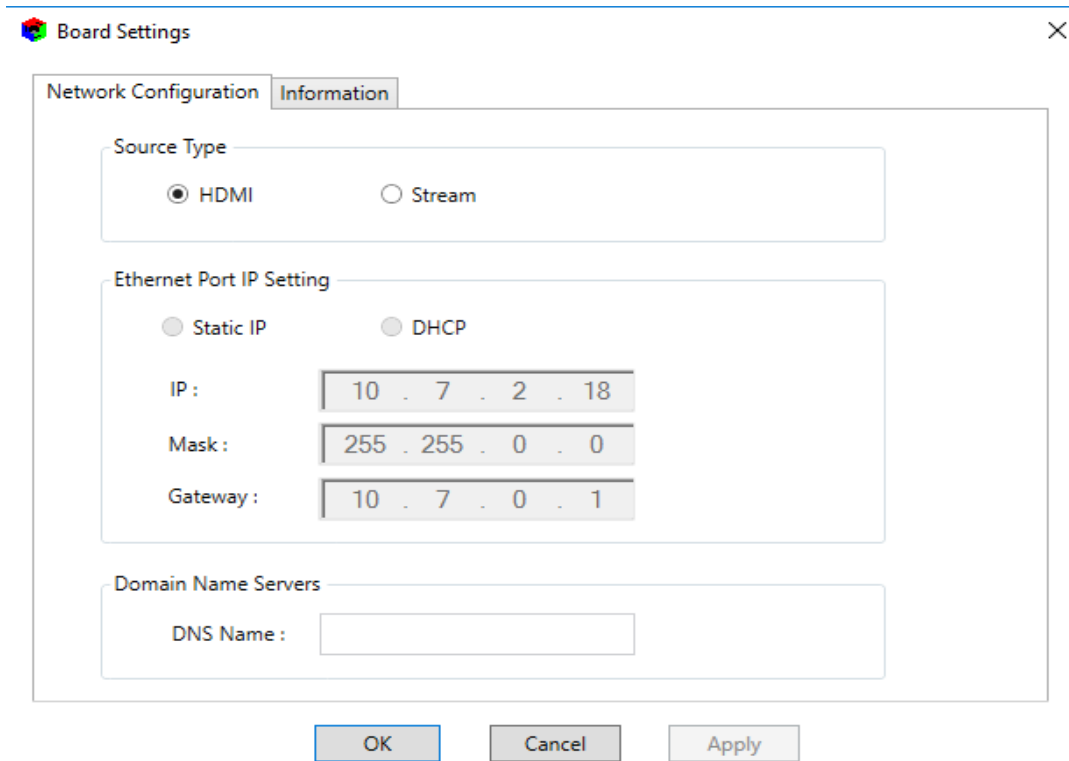
This tab displays the network configuration of a channel. The changes made in this tab applies to a specific channel. The **Source Type** can change between **HDMI** and **Stream**. The default **Source Type** for the board is **HDMI**. The **Ethernet Port IP Settings** has two options: **Static IP** and **DHCP**.

#### 4.22.6.3.1 HDMI

- There are two different source types: **HDMI** and **Stream**. When **HDMI** is clicked within the **Source Type**, there is nothing to be done for **Ethernet Port IP Settings**.

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The screenshot shows a dialog box titled "Board Settings" with a close button (X) in the top right corner. The "Network Configuration" tab is active, and the "Information" sub-tab is selected. The "Source Type" section has two radio buttons: "HDMI" (selected) and "Stream". The "Ethernet Port IP Setting" section has two radio buttons: "Static IP" (selected) and "DHCP". Below these are three input fields for IP, Mask, and Gateway, each containing a dotted-decimal address. The "Domain Name Servers" section has a "DNS Name" label and an empty text input field. At the bottom are three buttons: "OK", "Cancel", and "Apply".

Field	Value
Source Type	HDMI
Ethernet Port IP Setting	Static IP
IP	10 . 7 . 2 . 18
Mask	255 . 255 . 0 . 0
Gateway	10 . 7 . 0 . 1
Domain Name Servers	DNS Name : [ ]

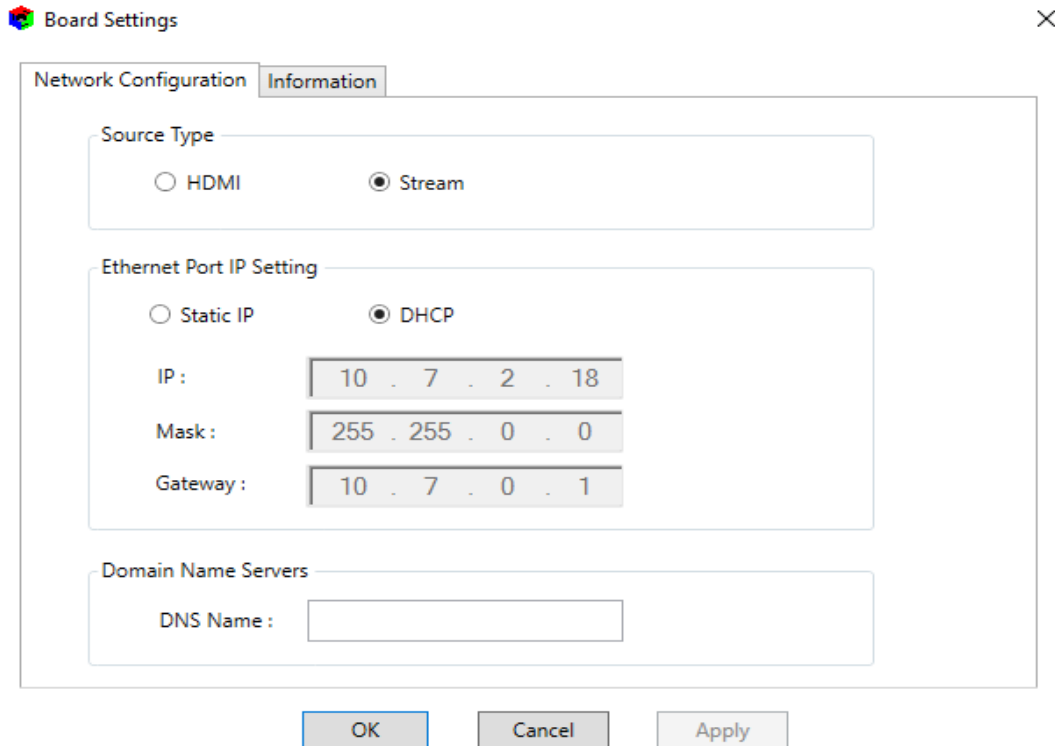
**Figure 4.111 - Network Configuration for HDMI**

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### 4.22.6.3.2 Stream

- When **Stream** is selected within the **Source Type**, there are two options for the **Ethernet Port IP Settings**. When **DHCP** is selected, the **IP**, **Mask**, and **Gateway** will be set and there is nothing to be done.



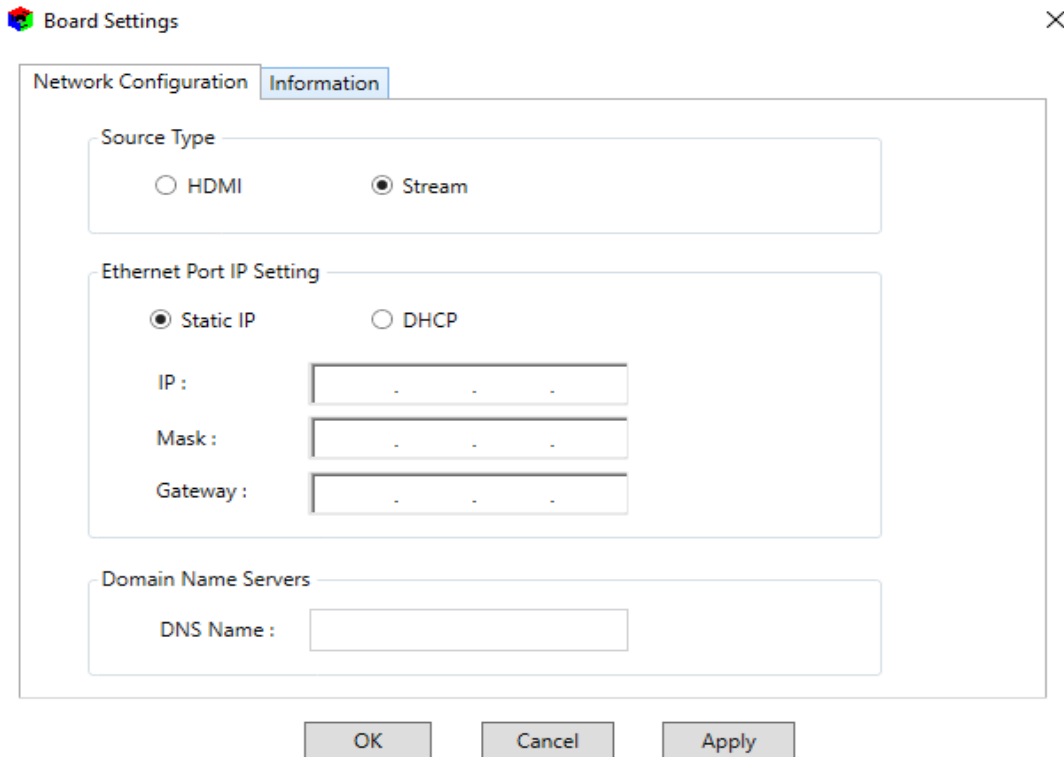
The screenshot shows a 'Board Settings' dialog box with a close button (X) in the top right corner. The 'Network Configuration' tab is active, and the 'Information' sub-tab is selected. Under 'Source Type', the 'Stream' radio button is selected. Under 'Ethernet Port IP Setting', the 'DHCP' radio button is selected. The 'IP' field is filled with '10 . 7 . 2 . 18', the 'Mask' field with '255 . 255 . 0 . 0', and the 'Gateway' field with '10 . 7 . 0 . 1'. The 'Domain Name Servers' section has a 'DNS Name' field that is currently empty. At the bottom of the dialog are three buttons: 'OK', 'Cancel', and 'Apply'.

**Figure 4.112 - Stream DHCP**

- When **Static IP** is selected, they will be blank as shown in the image below.
  1. Fill in the **IP**, **Mask**, and **Gateway** with you Network information.
  2. Click **OK**.

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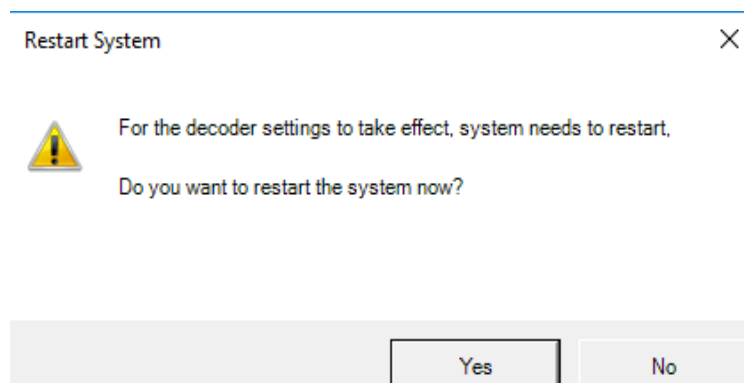
---



**Figure 4.113 - Static IP**

### 4.22.6.3.3 Restart IP Decoder

- When switching between **HDMI** and **Stream**, a restart will be necessary. Click **Yes** on the pop up as shown in the image before.
- 



**Figure 4.114 - Restart System**

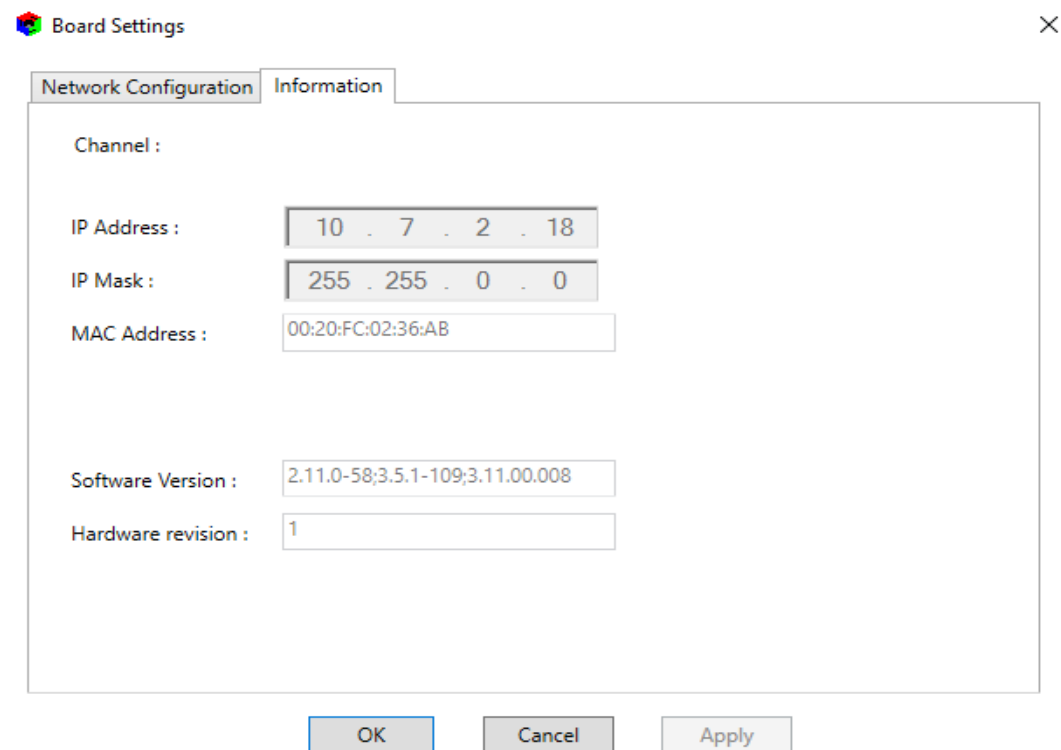


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### 4.22.6.4 Information Tab

The **Information Tab** shows the general information for the Board Settings.



The screenshot shows a dialog box titled "Board Settings" with a close button (X) in the top right corner. It has two tabs: "Network Configuration" and "Information". The "Information" tab is active. The dialog contains the following fields:

- Channel : (empty)
- IP Address : 10 . 7 . 2 . 18
- IP Mask : 255 . 255 . 0 . 0
- MAC Address : 00:20:FC:02:36:AB
- Software Version : 2.11.0-58;3.5.1-109;3.11.00.008
- Hardware revision : 1

At the bottom of the dialog are three buttons: "OK", "Cancel", and "Apply".

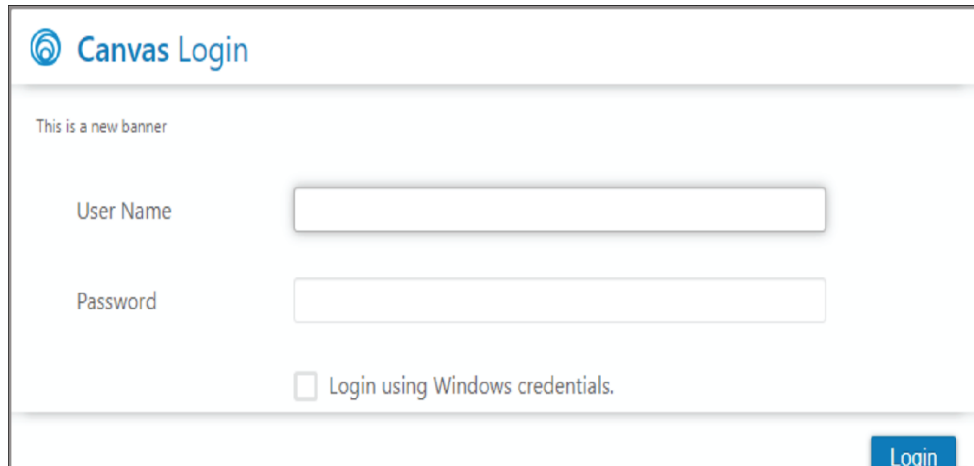
**Figure 4.115 - Information**

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### 4.23 Customized Login Text

You can add customized text to the Canvas Login dialog.



**Figure 4.116 - Custom Text in Login Dialog**

1. Enter the text into a text file.
2. Save the text file as LoginBanner.txt and put it in the Program Data/Canvas/Server directory.  
C:/ProgramData/Canvas/Server/LoginBanner.txt
3. On next launch of Canvas the Login dialog will have the new text.

## Chapter 5—Web Client

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### 5. Web Client

The Web Client is an integrated portal for Administration of the system and Mimic for multiple Walls.

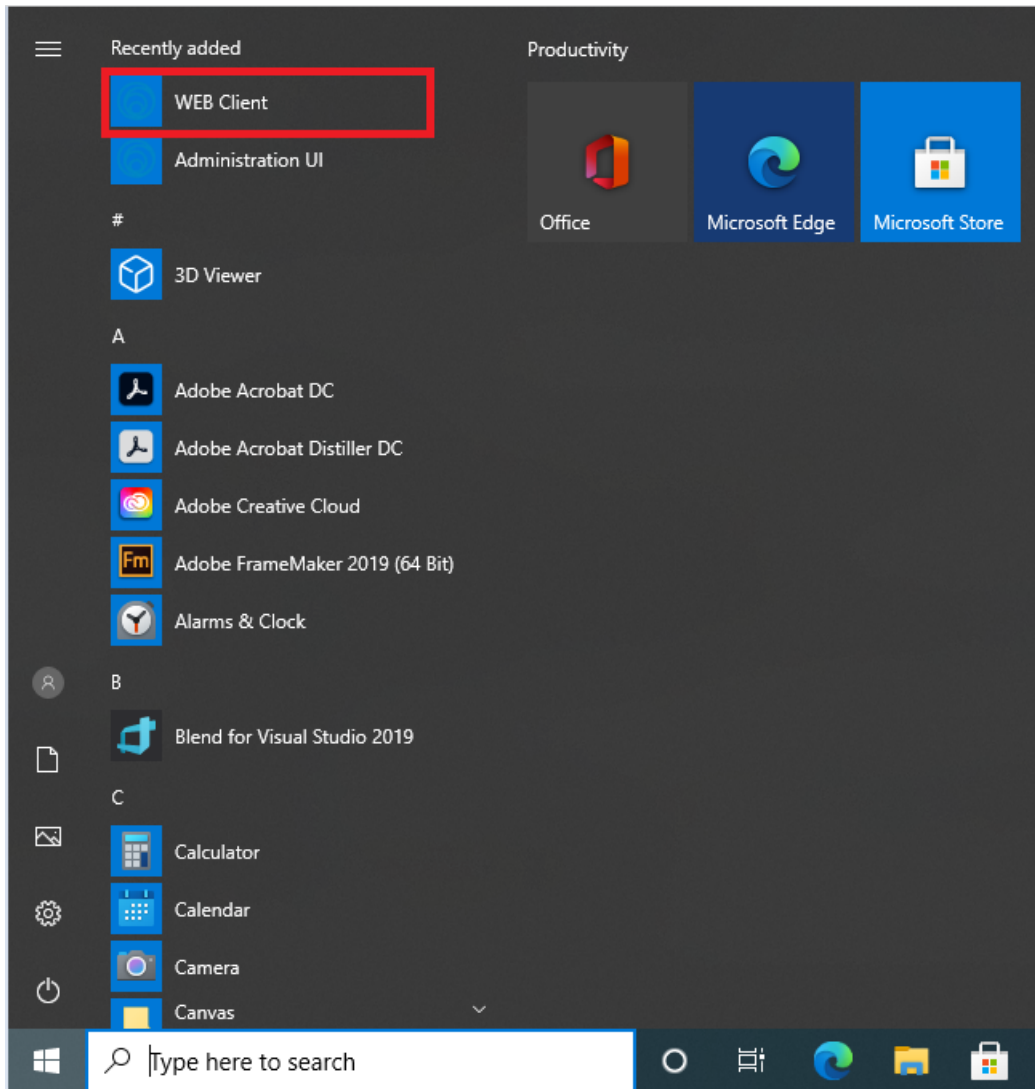
#### 5.1 Starting the Web Client

Web Client web page can **only** be accessed using a web browser:

1. Bring up a web browser (IE, Chrome) and point it to either:  
**https://<ip addr of canvas server>/canvas**  
-or-  
*<https://ComputerName/canvas>*  
-or-  
*<https://localhost/canvas>* if on the same computer
2. Once you have logged into the Web Client portal using a web browser, you can also call it from the Windows program menu. Click **Start button—>All Programs—>Canvas—> Web Client**

## 5—Web Client

---



**Figure 5.1 - Web Client Start Menu**

## 5—Web Client

---

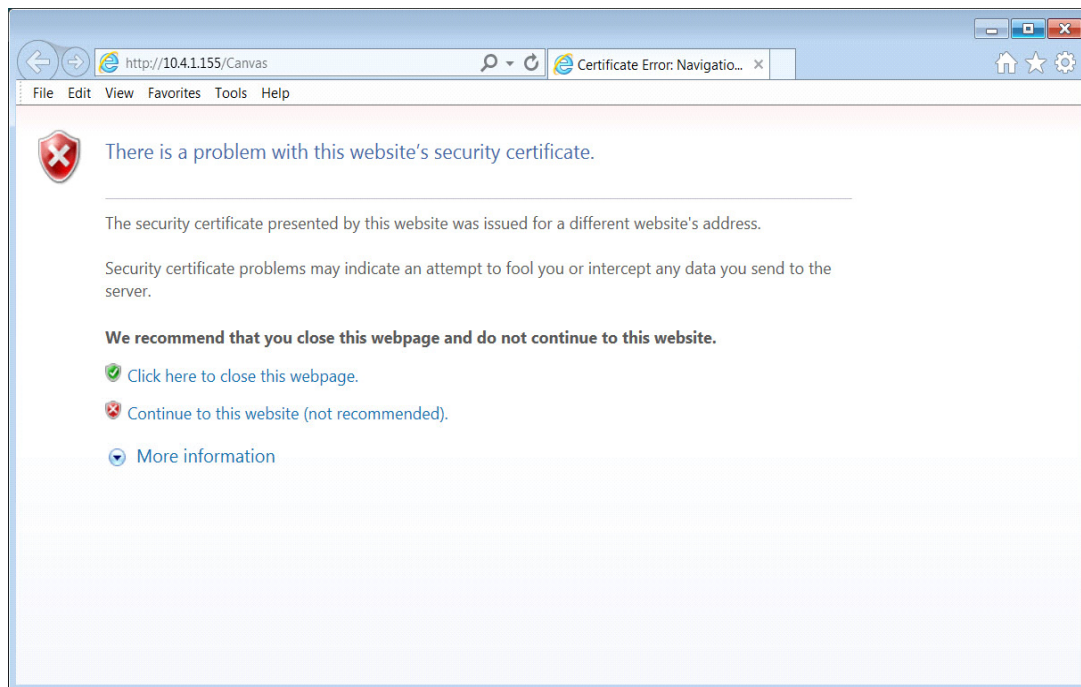
### 5.2 Web Client Login

A self-signed digital certificate is automatically generated when Canvas Server is installed. This is used for initial system setup and configuration until a Commercial Certificate is available. It always shows a security alert when logging on.

See [Section 5.2.2 Login with Commercial Security Certificate](#).

#### 5.2.1 Login with Self-Signed Security Certificate

After clicking the **Web Client** from the **Start** menu, a warning message will appear:



**Figure 5.2 - Certificate Warning Page**

1. Click on “**Continue to this website (not recommended)**”. An authentication dialog box will appear as follows:

---

**NOTE:** The URL field is highlighted in red in the example below. This reflects the fact that a self-signed security certificate does not possess the keys for proper encryption. However, this lack of security doesn't affect the usability of Canvas and the Administration UI features will work perfectly.

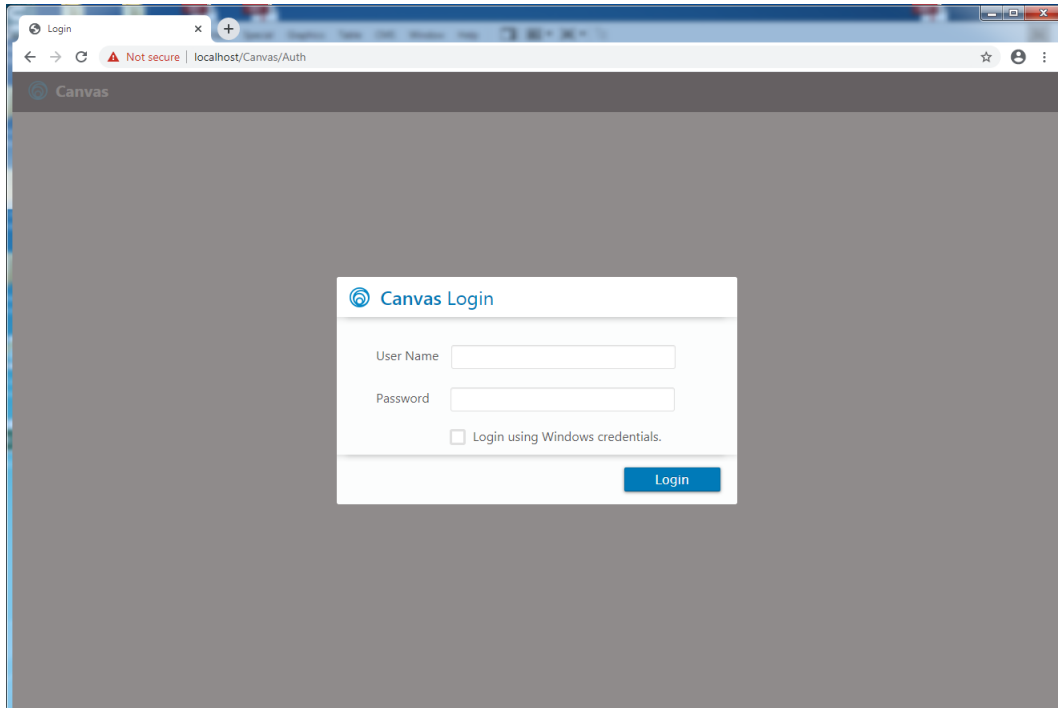
---

## 5—Web Client

---

NOTE: See [Appendix E. Self-Signed Security Certificates](#) on page 368, for a procedure to inhibit this error message.

---



**Figure 5.3 - Authentication Dialog**

2. Enter the **User Name** and **Password**  
The defaults are “**admin**” and “**canvas**”. The default login must be used after an upgrade to Canvas x.x.
3. Click **Log In**.

---

**Note:** Canvas allows 15 login attempts and if unsuccessful, the user is locked out for 15 minutes.

---

4. The Web Client UI will open to the web client page as shown in [Section 5.4 Opening Administration UI](#).

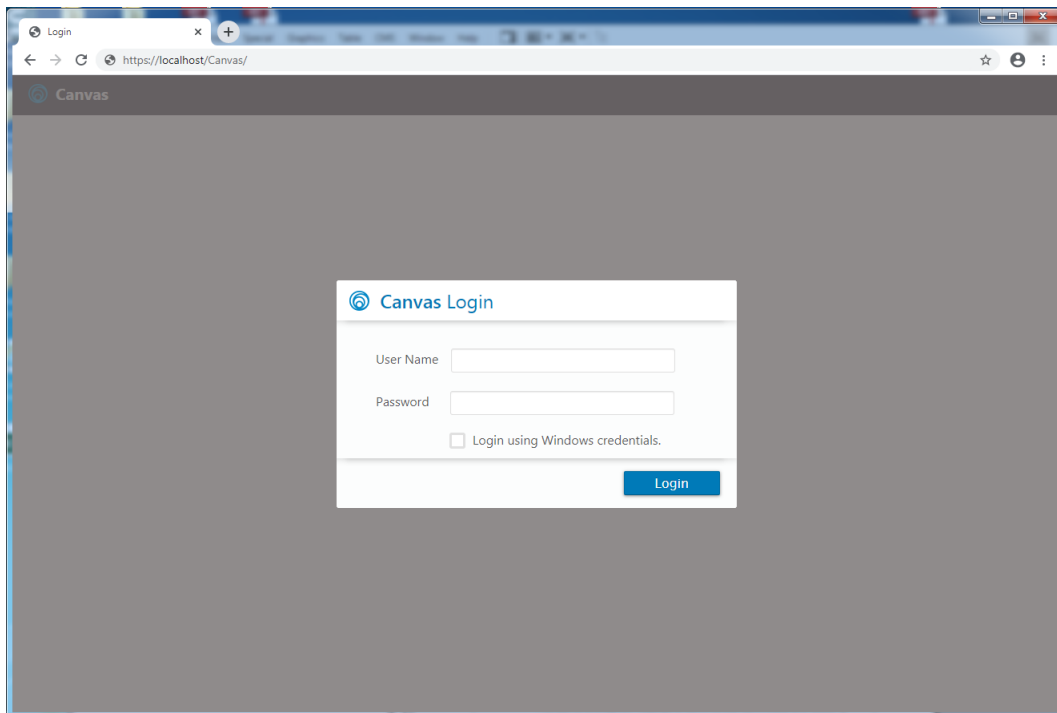
## 5—Web Client

---

### 5.2.2 Login with Commercial Security Certificate

See [Section 4.8.2 Encryption Certificate Installation & Enabling HTTPS](#) on page 38 to set up a commercial certificate.

After clicking the **Web Client UI** from the **Start** menu, an authentication dialog will appear requesting a User Name and Password:



**Figure 5.4 - Login - Commercial Certificate**

1. Enter the **User Name** and **Password**.
2. The default login for new installs or upgrades is “**admin**” and “**canvas**”. The default login for factory configured systems is “**Jupiter@1**” and “**canvas**”.

---

**Note:** Canvas allows 15 login attempts and if unsuccessful, the user is locked out for 15 minutes.

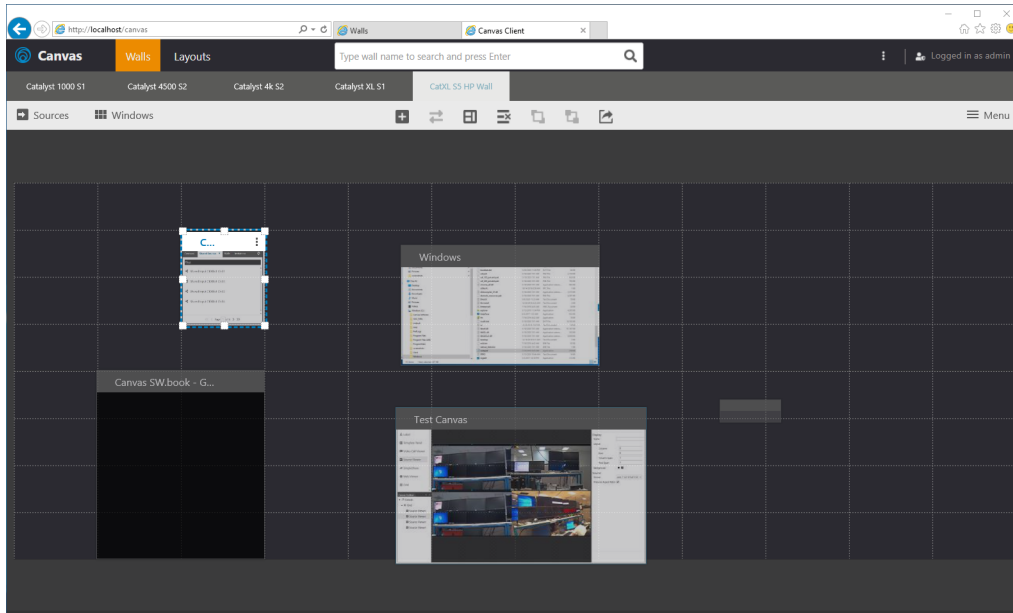
---

3. Click **Log In**.

## 5—Web Client

---

After logging in, the Web Client will open.



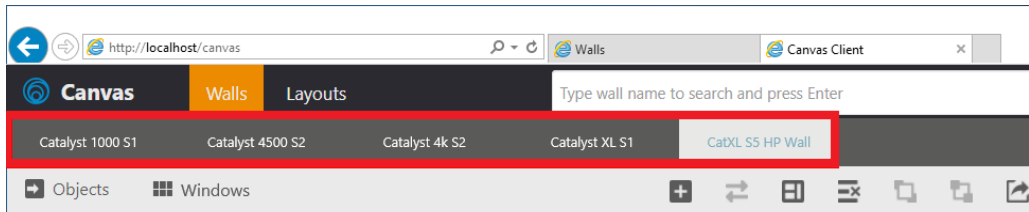
**Figure 5.5 - Web Client**



## 5—Web Client

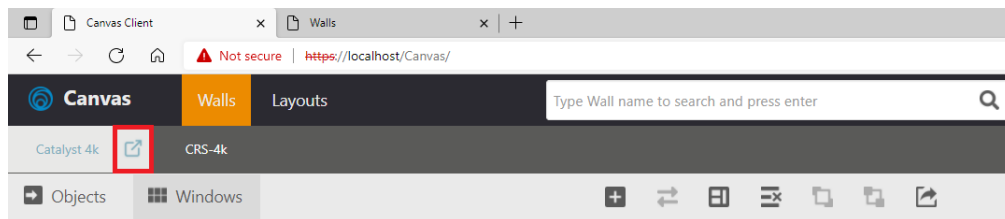
### 5.3 Viewing/Opening Walls

There is a list of available walls at the top of the window as seen in the figure below. Select a wall to view it



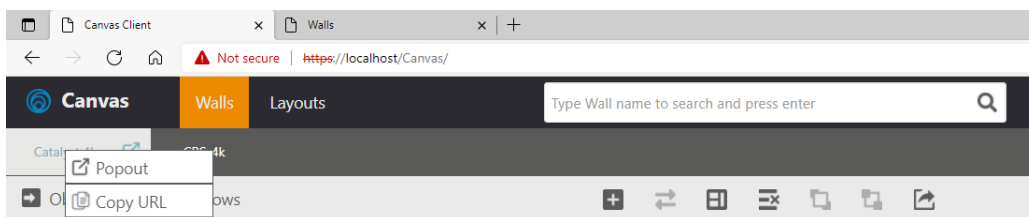
**Figure 5.6 - Selecting a Wall**

With Canvas 6.6, there a pop-out icon can be seen on the selected Wall; the icon can also be seen while hovering over a wall.



**Figure 5.7 - Pop-out icon**

Clicking on this icon will open a new page dedicated for the wall. Right-clicking the tab



**Figure 5.8 - Right click wall**

If the Walls tab is selected, clicking the pop-out icon will open the URL: **`https://<CanvasServerHost>/Canvas/Wall/<WallName>`**, in a new browser tab. Clicking copy will copy the above URL to the clipboard.

## 5—Web Client

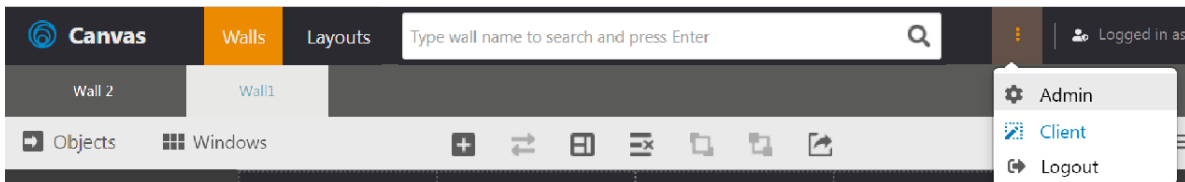
---

If the Layouts tab is selected, clicking the pop-out icon will open the URL: **https://<CanvasServerHost>/Canvas/Layouts/<WallName>**, in a new browser tab. Clicking copy will copy the above URL to the clipboard.

### 5.4 Opening Administration UI

To access the Administration UI, click on the icon in the top-right corner of the window.

A dropdown-menu will appear. Select **Admin** in the dropdown-menu to open the Administration UI. This option will only be available for admin users.



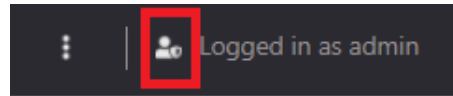
**Figure 5.9 - Opening Administration UI**

## 5—Web Client

---

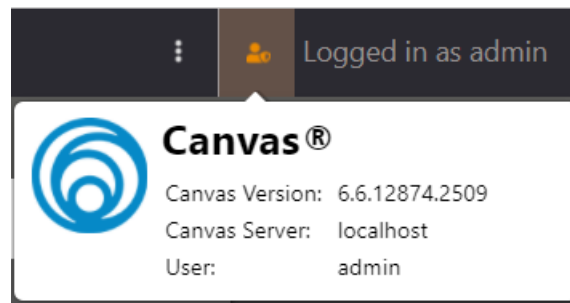
### 5.5 Notification Center

The user icon shown below can be clicked.



**Figure 5.10 - User Icon**

Once clicked a box of information about the Canvas Version number, the user, and the Canvas Server will be displayed



**Figure 5.11 - Canvas Information Box**

## 5—Web Client

---

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## Chapter 6—Administrative Functions

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### 6. Administrative Functions

Before Canvas can be used for sharing video and collaborating on projects, many items must be configured. Careful system administration will help ensure success with Canvas.

The Administration UI is used to configure canvas. The Administration UI can be accessed from the web client, as shown in [Section 5.4. Opening Administration UI](#). The Administration UI can also be accessed through the URL: `https://serverhostname/Canvas/security`.

Configuration should be done in the following order:

1. [Section 5.2. Web Client Login](#)
2. [Section 5.4. Opening Administration UI](#)
3. [Section 6.1.4. Administration - Workgroup Users](#)
4. [Section 6.2. Administration—Shared Sources Tab](#)
5. [Section 6.3. Administration—Canvases Tab](#)
6. [Section 6.5. Administration—Walls Tab](#)
7. [Section 6.6. Administration—Permissions Tab](#)
8. [Section 6.7. Administration — The More Tab](#)

---

NOTE: The Canvas database (.sdf file) consists of encrypted data for:

- User Roles and Accounts
- Sources
- Canvases
- Layouts
- CRS-5K settings
- Jupiter Mobile Server settings

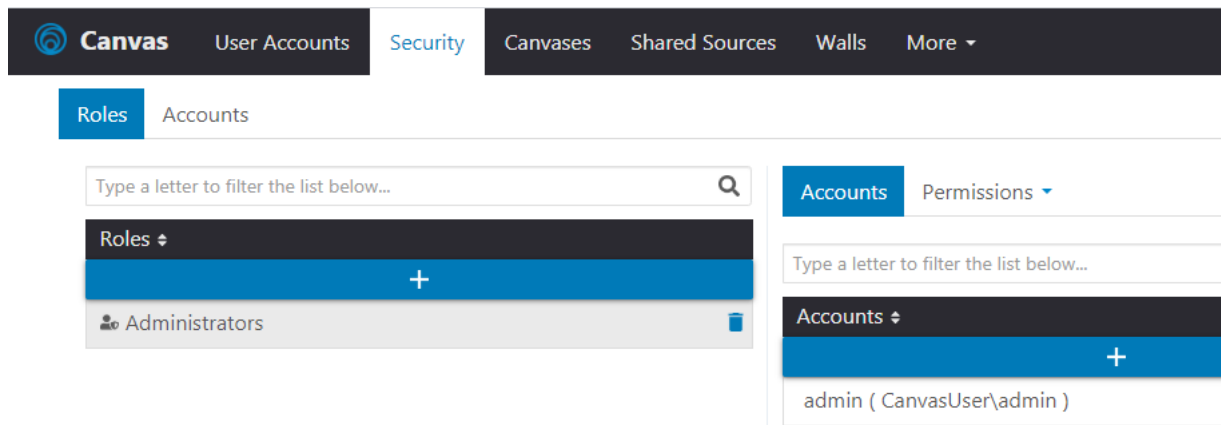
---

## 6—Administrative Functions

### 6.1 Administration - Domain Users

**CAUTION:** If an error occurs logging in or when creating domain users, the local IIS Manager may not have a link to the Domain Active Directory server. Check network connectivity. This link may be disabled in high security environments. Refer to [Section 4.11. Custom Domain Access](#).

By default, the Administration UI opens to the Security page:



**Figure 6.1 - Canvas Security Page**

#### 6.1.1 Roles and Users

The Security Page is used to configure which accounts have access to which Sources, Canvases, and Walls. This is accomplished by configuring Access Roles, and assigning Accounts to these Roles. Each Account can be assigned multiple Roles, and each Role can have multiple Accounts.

The Security page has two tabs. The Roles tab is organized by Role, and the Accounts tab is organized by Account.

The left side of the Roles tab shows the configured Roles. If a Role is selected, the right side of the page shows which Accounts have been assigned that Role. Selecting an Account automatically opens the Accounts tab.

The left side of the Accounts tab shows the configured Accounts. If an Account is selected, the right side of the page show which Roles are assigned to that Account. Selecting a Role automatically opens the Roles tab.

## 6—Administrative Functions

---


Canvas comes pre-configured with a role called Administrators. Only Administrators have full privileges to configure all Canvas features. By default, the Administrator has access privileges to all Source Aspects: View, Mimic and Control.

Separate Roles should be created for groups of users that will have rights to separate sources or canvases.

### 6.1.1.1 Adding Roles:

1. To add a role, click the + icon in the Roles table and enter the name of the role in the field.
2. To use another role as a template, select that role in the Copy From Role drop down list. All the accounts in that role will become part of the new role.
3. Click the Add button.

### 6.1.1.2 Deleting Roles:

To delete a role, click the garbage can icon  appearing to the right of a listed role.

## 6.1.2 Adding Domain Users

The Accounts tab on the Security page shows what Roles are assigned to each Account. Regular users are called Accounts in Canvas. Regular users have a variety of rights depending on the groups they're in and the permissions granted to them over sources and canvases.

### 6.1.2.1 Adding Accounts to Roles:

1. To add an Account to a role, highlight the Role on the left side of the page.
2. Go to the Accounts tab on the right-side of the page and click the + icon above the list of accounts.
3. Type in the email address of the domain user. After you have typed a unique combination of three characters or more, Canvas will locate the user and auto-fill the field, if recognized by the domain Active Directory.
4. Click the green Add button.
5. The user will be added to the list below Accounts Tab.

## 6—Administrative Functions

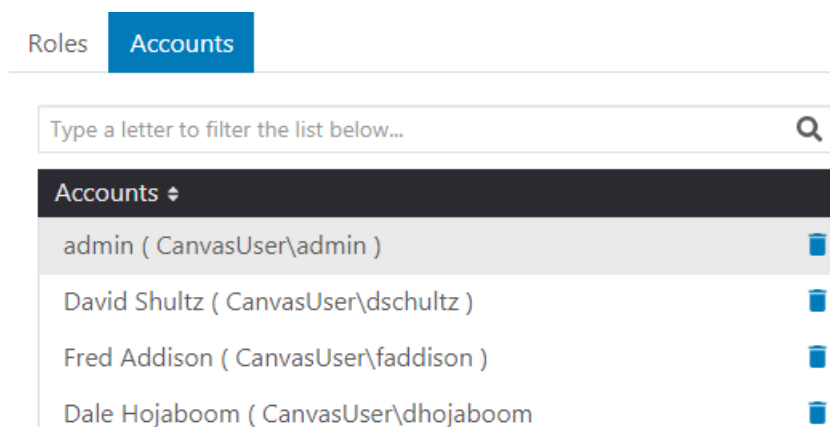
---

### 6.1.2.2 Removing Accounts from Roles:

There are two ways to remove an Account:

Remove ALL roles:

1. Click on the Accounts tab next to the Roles tab.
2. Click the garbage can icon at the end of an account listing.



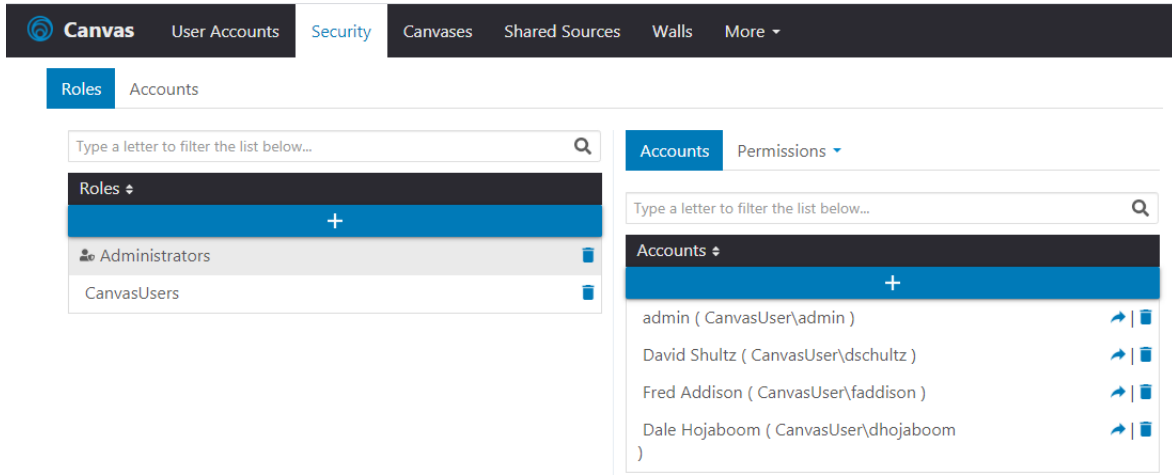
**Figure 6.2 - Accounts Tab (left side)**

Remove an account from a Single Role:

1. Click on the Accounts tab next to the Roles tab.
2. Go to the Accounts tab next to the Permissions tab
3. Click the garbage can icon at the end of an account listing.



## 6—Administrative Functions



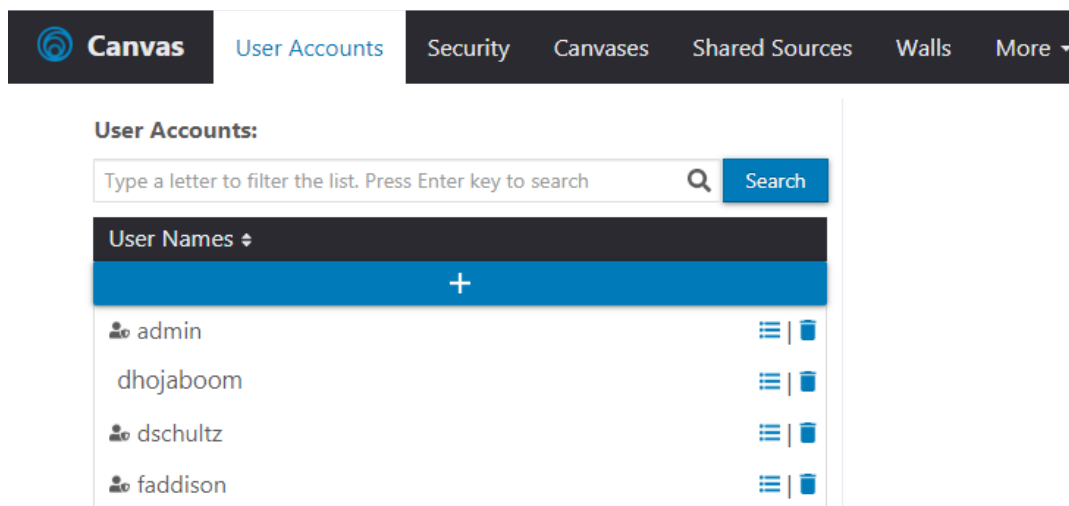
**Figure 6.3 - Accounts Tab**

### 6.1.3 Permissions Tab

Instructions for the Permissions Tab can be found in [Section 6.6. Administration—Permissions Tab](#).

### 6.1.4 Administration - Workgroup Users

Workgroup accounts are added, deleted and edited in User Accounts. Open the Administration UI per [Section 5.4. Opening Administration UI](#) and click on the User Accounts tab on the menu bar.



**Figure 6.4 - User Accounts tab**

## 6—Administrative Functions

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Two types of users are shown in the list above:

- admin is the default administrative user
- dhojaboom is a standard user
- dschultz is a new administrative user

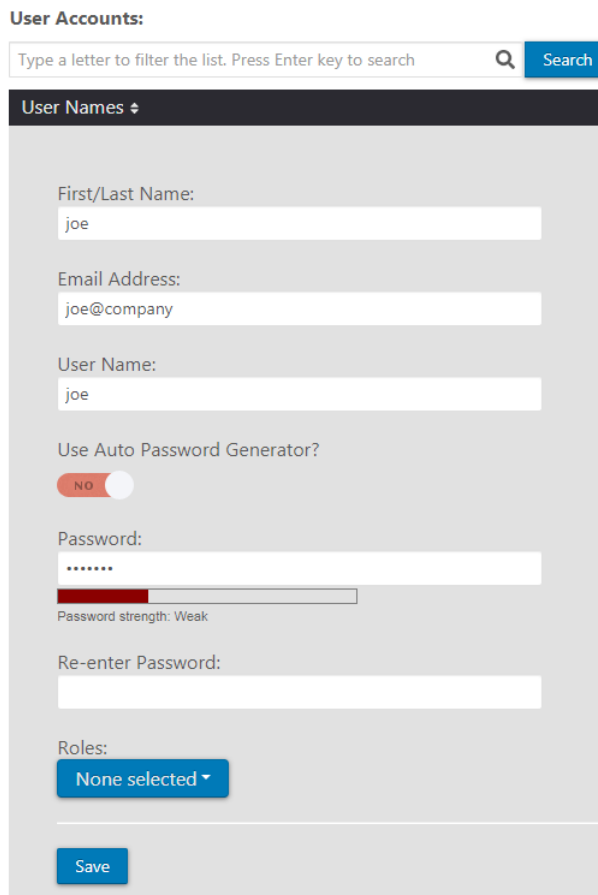
---

NOTE: Admin privileges are indicated by the person-shaped icon.

---

### 6.1.5 Creating New Accounts

1. To add a new Workgroup Canvas account, click on the + sign above the list of existing accounts. The following dialog box shows the Password Strength meter that appears if the Auto Password Generator is turned off:



**User Accounts:**

Type a letter to filter the list. Press Enter key to search

**User Names +**

First/Last Name:

Email Address:

User Name:

Use Auto Password Generator?  
 NO

Password:

Password strength: Weak

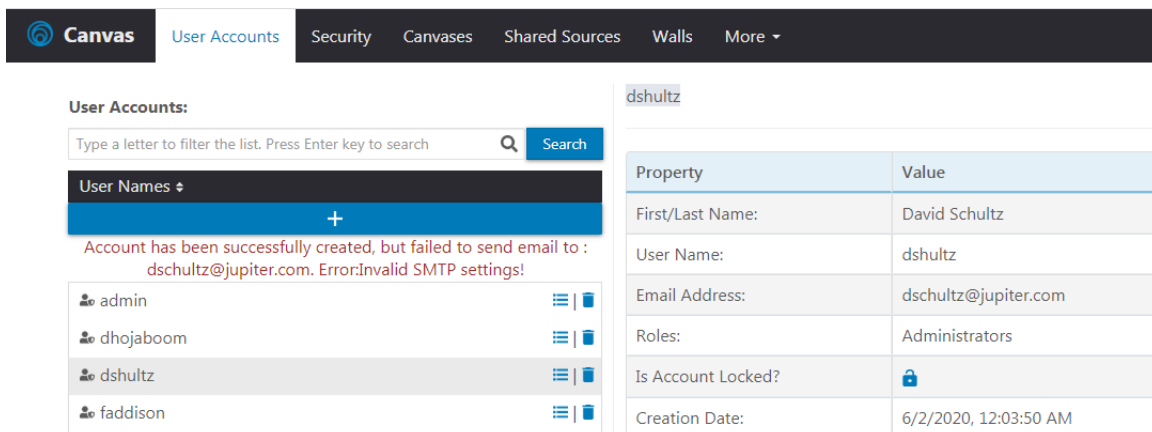
Re-enter Password:

Roles:

**Figure 6.5 - Account Creation**

## 6—Administrative Functions

2. Enter the First/Last Name, Email Address and User Name.
3. Select any or all of the available roles at the bottom of the page. In our example, there are two roles available and both have been selected.
4. Click on the Save button to create the account.
5. A page will open showing that Canvas successfully created the account, but warning that it failed to send email because of invalid SMTP settings for the localhost. Refer to [Section 6.7.4.2. Email SMTP Settings](#).



The screenshot shows the Canvas administrative interface. The top navigation bar includes 'Canvas', 'User Accounts', 'Security', 'Canvases', 'Shared Sources', 'Walls', and 'More'. The 'User Accounts' section is active, displaying a search bar and a list of user names: 'admin', 'dhojaboom', 'dshultz', and 'faddison'. A red warning message states: 'Account has been successfully created, but failed to send email to : dschultz@jupiter.com. Error:Invalid SMTP settings!'. To the right, a table displays the details for the user 'dshultz'.

Property	Value
First/Last Name:	David Schultz
User Name:	dshultz
Email Address:	dschultz@jupiter.com
Roles:	Administrators
Is Account Locked?	
Creation Date:	6/2/2020, 12:03:50 AM

**Figure 6.6 - Email Warning on New Account**

### 6.1.5.1 Automatic vs Manual Password Creation

Go [Section 6.7.4.2. Email SMTP Settings](#) to setup the localhost for email. Once the Auto Password Generator is set to YES, Canvas will generate a random password for the account and attempt to email the password to the new user.

If the email can't be sent, the user will never know the password. This problem could also occur if the user's email server isn't working properly when Canvas sends the welcome message. In this situation, the Canvas administrator must edit the account and manually generate the password.

When passwords are created manually, the new password must be emailed to the new user from another computer and receipt verified.

## 6—Administrative Functions

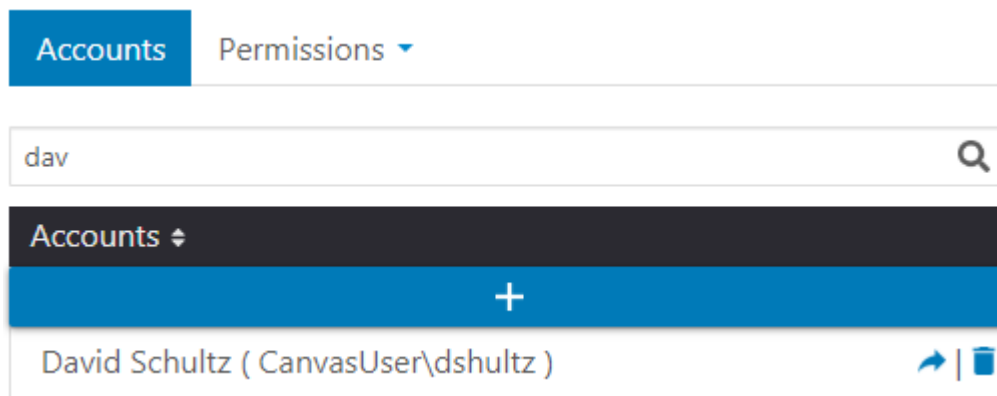
---

### 6.1.6 Search Fields in Canvas pages

The number of accounts, sources, and canvases can become large in a busy Canvas environment. Lists of sources, for example, may extend to several pages.

To facilitate finding a particular object, search fields are included with each category in the pages of the Administration UI. These fields allow a user to enter a the first three or more unique characters of the object and the matching object will be displayed.

In the example below, a search was made for user David.



**Figure 6.7 - Typical Search Field**

## 6—Administrative Functions

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### 6.2 Administration—Shared Sources Tab

After setting up Accounts and Roles, the next step is to create Canvas Sources. The Admin will use the Sources tab to add Sources found in the network so that Canvas Clients can access them.

---

NOTE: Sources may also be created by building a batch file with all of the attributes described in this section. See [Section 3. Canvas Source Batch Files](#).

---

#### 6.2.1 Source Aspects

Depending on the Canvas version being used, a Source may have up to three aspects that need to be defined: View, Mimic, and Control.

- View defines how the source will be viewed on the wall.
- Mimic defines a source that Controls the desktop of another Canvas Client, usually a display wall.
- Control defines keyboard and mouse control over the source from remote clients.

The initial focus is on the View tab to see Sources on the Client desktop. The Control function is discussed in [Section 6.2.7. Editing Source/Wall aspect — Control](#) and Mimic is discussed in [Section 6.5. Administration—Walls Tab](#).

#### 6.2.2 Adding Sources

This section describes sources that are added to a Client directly. Direct Input and Web Sources are usually added as Mimic Objects, which can be controlled externally through the Mimic API. [Section 8.4. Local Sources](#). This section also describes how to create Applications and other Objects.

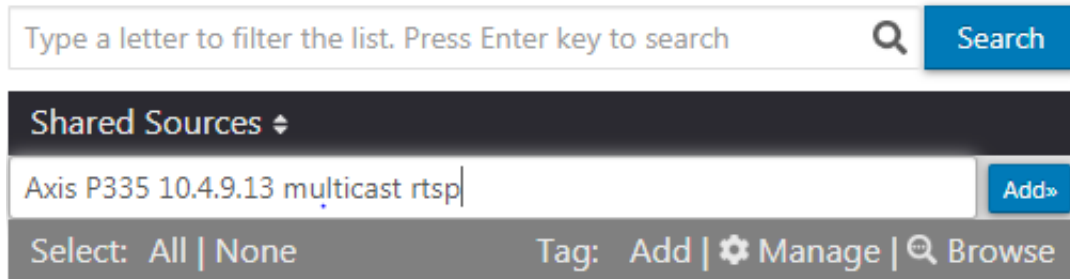
1. On the Sources page, go to the Available Sources list and click the + icon.

## 6—Administrative Functions

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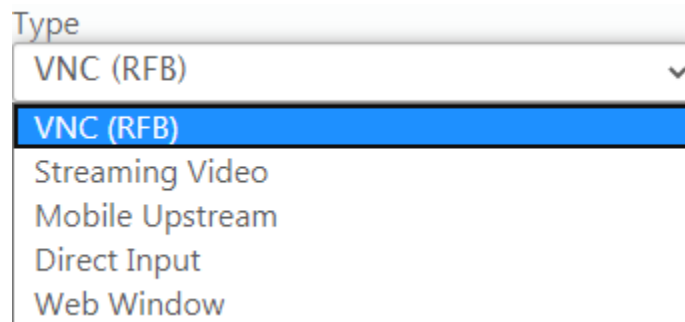
2. In the field that appears, enter the name of the New Source being added. In the example below, an Axis camera source is defined:

### Available Sources:



**Figure 6.8 - Adding a Source**

3. Click the green Add button after entering the name of the source.
4. The Edit Source Aspects dialog box will open automatically allowing you to fully define the source.
5. Pick the Source Type from the drop down menu. By default, there are five choices:



**Figure 6.9 - Source Types**

See [Chapter 12. Canvas SimpleShare](#).

## 6—Administrative Functions

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### 6.2.2.1 VNC Source

A VNC source is a network capture source that uses the Remote Frame Buffer protocol (RFB) to remotely control another computer. RFB is more commonly called VNC (Virtual Network Computing). VNC operates over the reliable transport protocol TCP/IP.

VNC consists of two applications:

- VNC Server for the computer to be controlled
- VNC Viewer for the device which will control the target computer

A VNC Server captures the desktop of the computer in real time and sends it to the VNC Viewer for display. A VNC server can be:

- A hardware network device connected to a video source
- Software installed on the target system displaying the source

VNC software must be installed and running on the target computer. Installation and use of Real VNC is described in [Appendix C. VNC for Canvas](#) on page 369 of this manual.

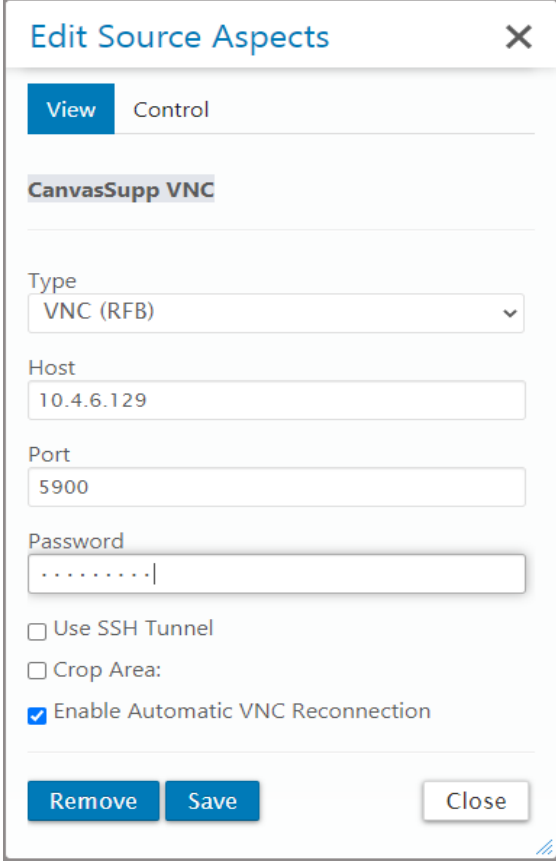
A VNC Viewer displays the video image sent by the VNC Server. Canvas comes with a built-in VNC Viewer. Each VNC source configured in Canvas uses the Canvas VNC viewer.

The VNC Server and VNC Viewer communicate directly, but only passwords

## 6—Administrative Functions

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are encrypted. The video data is sent unencrypted.



**Figure 6.10 - VNC Source options**

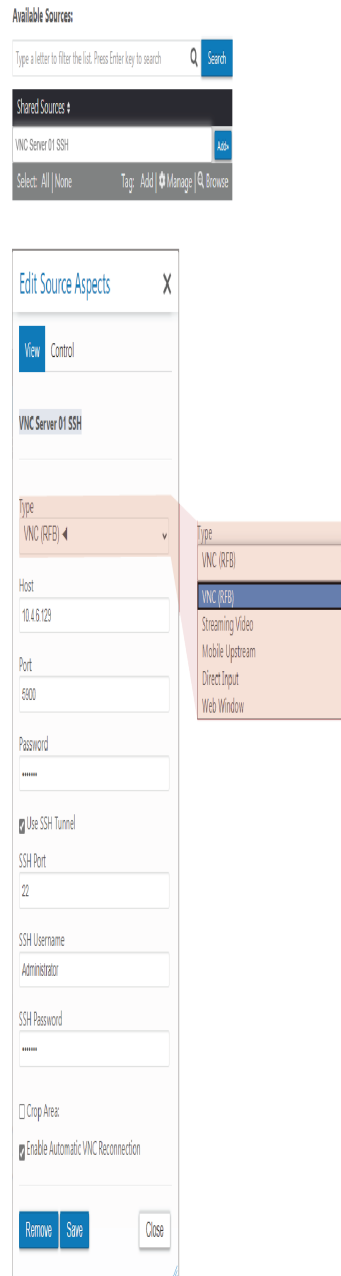
See [Appendix C.2. Getting Started with Real VNC](#) on page 370 for more information.

For VNC Server with SSH, Check Use SSH Tunnel.



## 6—Administrative Functions

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**Figure 6.11 - VNC with Use SSH Tunnel Option**

See [Appendix C.3. SSH with Real VNC](#) on page 375 for more information.  
 VNC Configuration Notes:

## 6—Administrative Functions

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1. The Host label is a descriptive name or IP address for the target computer connection.
2. The Port field shows the default of 5900. This may be changed to avoid port conflicts with other applications.
3. The Password is the same one configured on the VNC Server on the target computer.
4. Check the SSH Tunnel box to set up encrypted network links.
5. Crop Area for the VNC image is optional. It is used for zooming in on an important part of the image. The Left and Top variables describe the X and Y starting points in pixels, the Width and Height describe the size of the window.
6. Enable Automatic VNC Reconnection restarts the VNC session if the link is broken.
7. When finished configuring the options, click the Save button, then click Close.

---

**CAUTION:**

Make sure that the SSH Server is installed and running on the VNC source.

---

See [Section 6.2.7.2 VNC Operation](#) on page 171 for configuration and operation of keyboard and mouse control of a VNC Source.

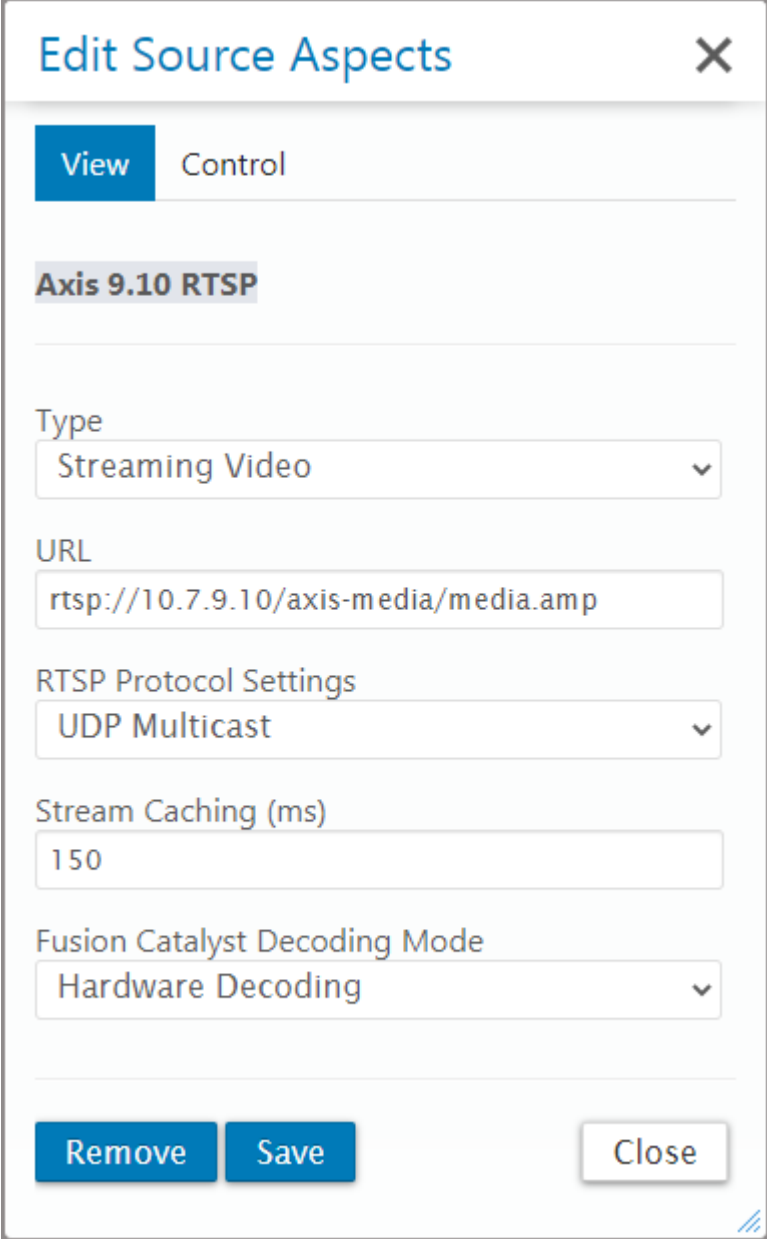
## 6—Administrative Functions

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### 6.2.2.2 Streaming Source

The Streaming video source type accommodates video streams that need to be displayed in a canvas. Video streams can come from many sources, including media players, video servers, IP cameras, encoders, and other computers.

Shown below is an example of an IP Camera stream.



The screenshot shows a dialog box titled "Edit Source Aspects" with a close button (X) in the top right corner. At the top, there are two tabs: "View" (selected) and "Control". Below the tabs, the source is identified as "Axis 9.10 RTSP". The dialog contains several configuration fields:

- Type:** A dropdown menu set to "Streaming Video".
- URL:** A text input field containing "rtsp://10.7.9.10/axis-media/media.amp".
- RTSP Protocol Settings:** A dropdown menu set to "UDP Multicast".
- Stream Caching (ms):** A text input field containing "150".
- Fusion Catalyst Decoding Mode:** A dropdown menu set to "Hardware Decoding".

At the bottom of the dialog, there are three buttons: "Remove" (blue), "Save" (blue), and "Close" (white with a grey border). A small blue double-slash icon is visible in the bottom right corner of the dialog box.

**Figure 6.12 - Streaming Source Options**

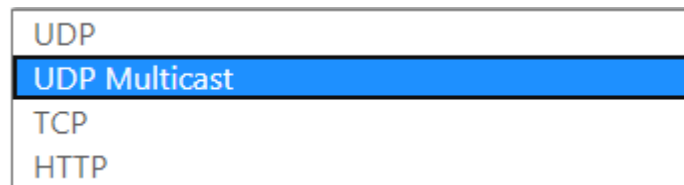
## 6—Administrative Functions

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Streaming Source Configuration Notes:

1. The URL text for the video stream will usually be defined by the manufacturer of the streaming device. The URL might be found in the device's user manual or by calling the manufacturer's tech support department.

Protocol Settings. The choices are:



**Figure 6.13 - Protocols**

The RTSP Protocol uses both UDP and UDP Multicast.

The RTP Protocols uses only UDP Multicast.

UDP – The classic unicast choice. Fast and sometimes lossy, but very efficient and reliable on good quality networks. A limited number of unicast streams may be available simultaneously by the source device.

UDP Multicast – Same features as unicast UDP, but the stream is distributed by the network switches (which must support “IGMP Snooping”). Eases the load on the source device and allows many more copies of the image to be displayed.

TCP – TCP is a reliable transport in that it retransmits corrupted or lost packets. TCP guarantees delivery. This will slow down transmission, however -- usually too much for live video. It is best used for streaming recorded material. Stream Caching can be adjusted to improve stream consistency.

HTTP – Another unicast method for streaming. HTTP operates over TCP so it provides reliable delivery, and Adaptive Bitrate Streaming keeps TCP delays short. The big advantage is that HTTP can traverse firewalls. (Firewalls are commonly configured to allow the HTTP protocol.) HTTP is frequently used to deliver multimedia files from Content Delivery Networks (CDNs).

## 6—Administrative Functions

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MPEG2, MPEG4 and H.264 streams are also supported. Refer to [Appendix B. Supported Video Streams/IP Video Cameras](#) on page 355 for details on setting up raw multicast streams.

2. The Stream Caching (ms) variable is 150 ms by default. This relatively small caching buffer will allow the stream to begin playing quickly. However, the stream may stall if the network to the Canvas client can't handle the stream's bandwidth. In that case, increase the value of the caching as needed to buffer the stream.

The Catalyst Decoding Mode offers a choice of Hardware Decoding or Software Decoding for Catalyst 4K processors. Hardware Decoding is the default on a Catalyst, which uses Quad Decoder boards, while other Clients use software decoding.

Choose Software Decoding only to force streams to use the software decoding in a Catalyst 4K when the stream cannot be captured by the hardware decoder or audio is required.

For Catalyst Hardware Decoders, latency is reduced by appending the Instantplay option on the Source URL:

rtsp://<IP>/video1/\_\_\_instantplay (note two underscores)

3. When done choosing options, click the Save button, then click Close.

## 6—Administrative Functions

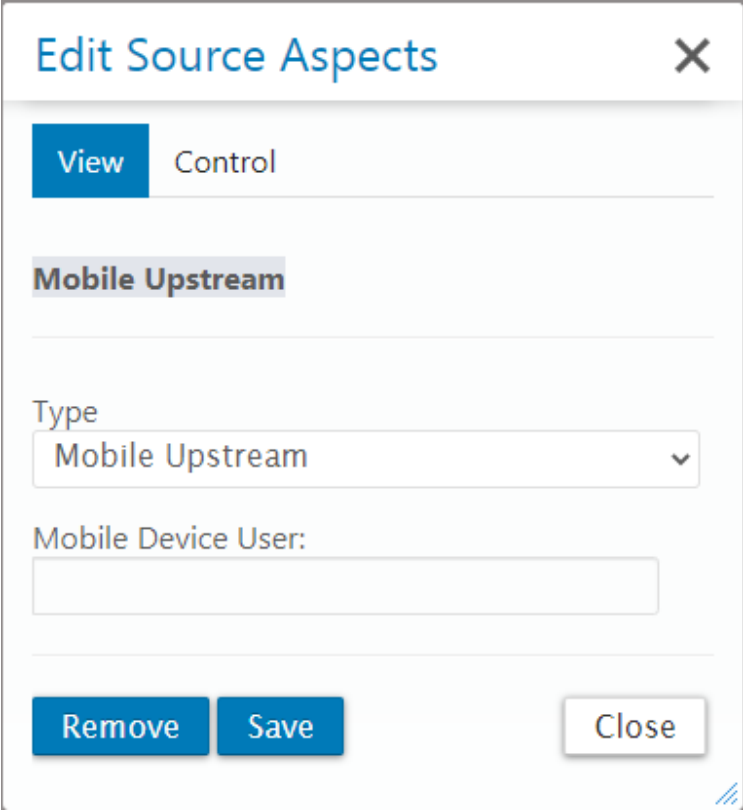
---

### 6.2.2.3 Mobile Upstream Source

Video streams from Android and IOS mobile devices can be accommodated via the “Mobile Upstream” source. Once created, a Canvas Mobile user can use an Android or iOS device as a video source by clicking on the “video upstream” icon on the mobile device. This video will be multicast and pushed into the Canvas network.

#### Configuration Notes:

1. Select Mobile Upstream in the drop-down menu under Type.
2. Enter the mobile device username in the “Mobile Device User” field. If the name is recognized, it will be pulled from the Canvas database of licensed mobile users.
3. When done choosing options, click the Save button, then click Close.



The screenshot shows a dialog box titled "Edit Source Aspects" with a close button (X) in the top right corner. Below the title bar, there are two tabs: "View" (selected) and "Control". The main content area is titled "Mobile Upstream" and contains a "Type" dropdown menu set to "Mobile Upstream". Below this is a text input field labeled "Mobile Device User:". At the bottom of the dialog, there are three buttons: "Remove", "Save", and "Close".

Figure 6.14 - Mobile Upstream Source Options

## 6—Administrative Functions

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### 6.2.2.4 Direct Input Source

A Direct Input source is any device that connects to a Catalyst HDMI, DisplayPort or SDI Input connector. Input signals typically come from devices such as TV tuners, DVD and Blu-Ray players, signal generators, media players, computers and mobile devices.

---

**NOTE:** The input source must be a progressive signal since the Catalyst inputs do not work with interlaced signals.

---

---

**NOTE:** Jupiter's HDCP input boards can handle copy-protected signals. Not having both HDCP Capture and Graphics boards, copy-protected material will not be displayed (the window content may flash an image briefly, but then will go blank).

---

---

**NOTE:** Canvas 5.0 and higher support both digital and analog inputs (with appropriate active converters). With Canvas 3.x or lower, only digital inputs are supported.

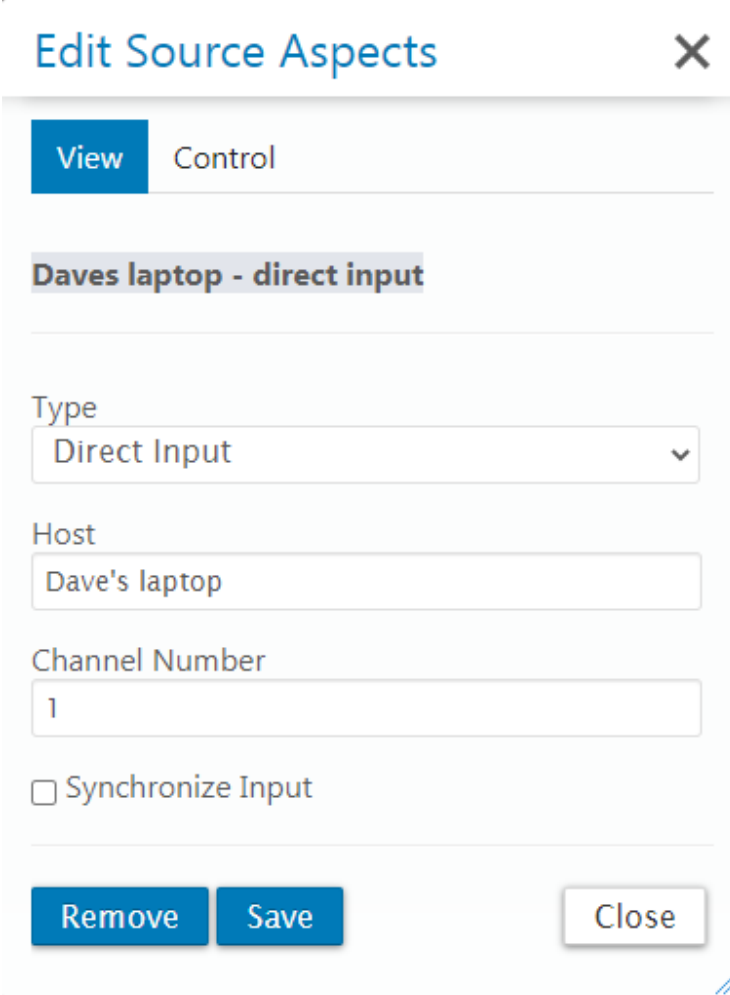
---

Direct Input Configuration Notes:

1. The Host field is a the Computer Name or IP Address of the Catalyst System.
2. The Channel Number corresponds to the physical location of the Direct input connector. Looking at the back of the Catalyst V, Direct input port #1 is the lowest connector on the leftmost input board. The connector above it is input #2. If the first board is a two port board, then the lowest connector on the next board to the right is #3. Above it is #4, and so on. Expansion chassis for Catalyst XL follow the same rules.

## 6—Administrative Functions

---



**Edit Source Aspects** [X]

**View** Control

**Daves laptop - direct input**

Type  
Direct Input

Host  
Dave's laptop

Channel Number  
1

Synchronize Input

Remove Save Close

**Figure 6.15 - Direct Input Source Options**

### **Synchronized Inputs**

Under special circumstances, the outputs from a multi-headed computer can be synchronized by the IP Decoder capture board. The signals in the synchronized source windows will all display simultaneously. Assuming all outputs are 4K and they display parts of a large image, this synchronization effectively can provide up to an 8K input resolution (4 x 4K).



## 6—Administrative Functions

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### Synchronization Rules

To achieve synchronization, certain rules must be followed:

1. The outputs from the source computer must have the exact resolution and must have “locked” timing. The multiple outputs must all be synchronized to start from the same clock pulse. If the signals arrive at the IP Decoder board with different clock synchronization (even if they originate from the same video board), the SreamPoint synchronization won’t work and nothing will be displayed in the participating windows.
2. The synchronization is configures per board. The inputs on one IP Decoder board cannot be synchronized with the inputs from a different IP Decoder board. Only one synchronization group can be configured per board.
3. The synchronization creates an “all or nothing” group. Every input in the group must have a signal present or the synchronization will fail and nothing will be displayed in the participating windows.
4. The members of a synchronization group don’t have to be displayed at the same time for the windows to work.

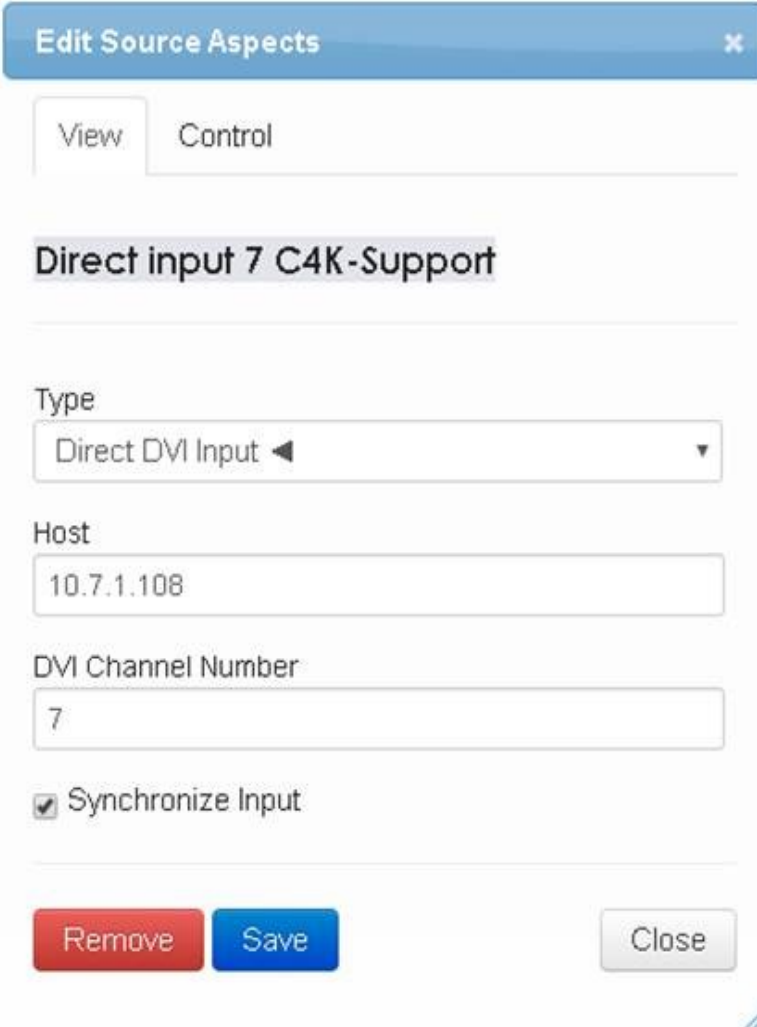
### Creating the Synchronization Group

To create the synchronization group:

1. Connect up to four outputs from a source computer to a IP Decoder board.
2. For each input, create a Direct Video Input share source. Use the channel number of that input. The inputs on a IP Decoder board are numbered from bottom to top. Not the position of the IP Decoder board to determine its channel numbers. For example, if a Catalyst already has two two-port input boards (providing input channels 1-4), a IP Decoder board will add channels 5-8.
3. For each Direct Video Input source created, select the “Synchronize Input” box, as shown in the screenshot below. Canvas will then synchronize all the selected channels on that board.

## 6—Administrative Functions

---



**Edit Source Aspects** ✕

View Control

**Direct input 7 C4K-Support**

Type  
Direct DVI Input ▼

Host  
10.7.1.108

DVI Channel Number  
7

Synchronize Input

Remove Save Close

**Figure 6.16 - Synchronize Input Option**

## 6—Administrative Functions

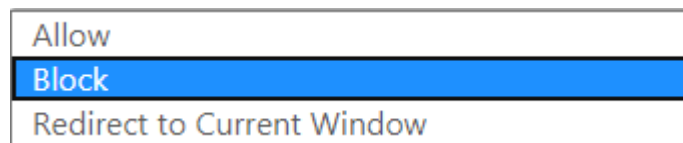
---

### 6.2.2.5 Web Window Source

A Web Window source displays a web page in a Canvas window. It can be used for displaying any web content, from web-based applications to commercial websites.

#### Web Window Configuration Notes:

1. The URL field contains the website's address.
2. The Username and Password fields can be filled in for sites that require membership and authentication. Web windows support Basic or Windows authentication. Success using these fields will depend on the website. An example of Windows authentication is the Canvas Administration UI page. The username and password configured in an Administration UI web window will be automatically used by the web page (no need to enter the data manually).
3. Popup Handling Behavior has the following options:



- Allow will let popup windows appear as separate windows.
  - Redirect to Current Window will put popups in the primary web window.
  - Block prevents the popup window from appearing at all.
4. Auto Refresh Enabled is convenient for websites that have changing data that isn't visible until a refresh is performed on the page.
  5. The Scroll and Zoom options crop the web page by either starting at a particular point (eliminating the data that comes before it) or zooming in (eliminating the data that falls outside the window size).

## 6—Administrative Functions

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### Edit Source Aspects ✕

**View** Control

---

**InFocus Website**

---

Type  
Web Window ▾

URL  
www.infocus.com

User Name

Password

Popup Handling Behavior  
Block ▾

Auto-refresh Enabled

Scroll Horizontal (px)     Scroll Vertical (px)

Zoom (%)

---

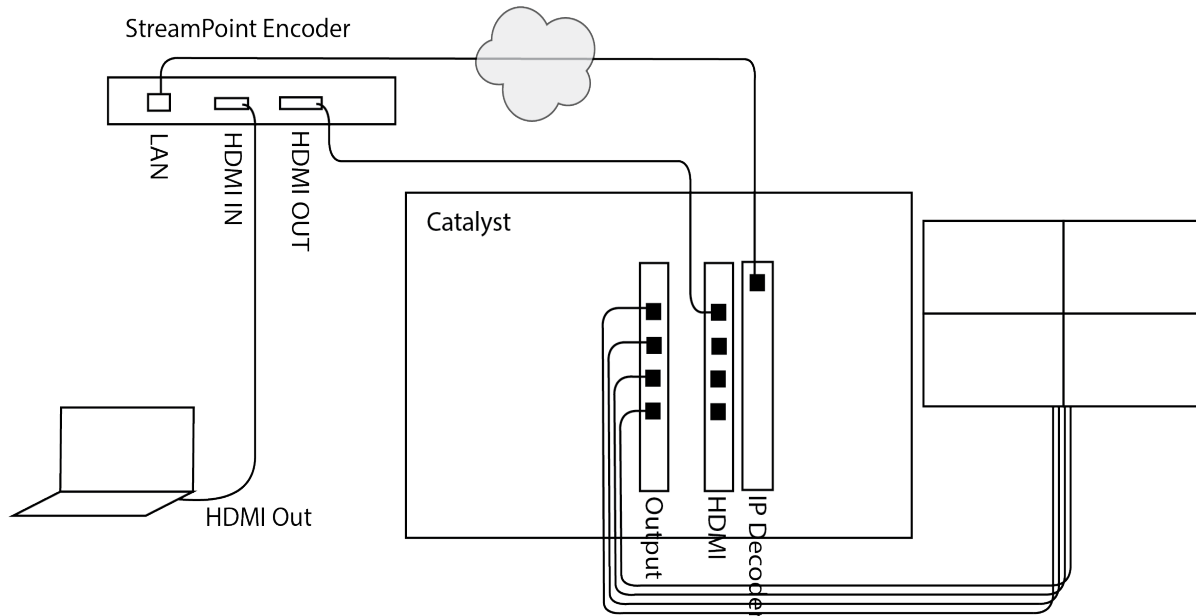
**Remove** **Save**

**Figure 6.17 - Web Window Source options**

## 6—Administrative Functions

### 6.2.3 Multiple Source Types for One Shared Source

In a shared source's Properties page you can add multiple source types to the same shared source.



**Figure 6.18 - Using Encoder as a Splitter**

For example, assume you have a laptop that you wish to be a direct input to a Catalyst as well as share that input. As noted later in this chapter, [Section 6.2.2.4. Direct Input Source](#), Direct Inputs can only be displayed on the local wall, they cannot be seen by other Canvas clients. However, by encoding the laptop's output and creating a Streaming source, it becomes viewable by any Canvas client. To accomplish this scenario, you can create a multi-type source. This procedure assumes that an IP Decoder board is already installed and configured.

1. Connect the laptop to an encoder that has an HDMI input and HDMI output port.
2. Connect the HDMI output from the encoder to an HDMI input port on the Catalyst (You can also use a Magewell HDMI to USB adapter to connect to a CRS-5K USB port. See [Appendix H.H.. Input Capture](#) on page 352.
3. Connect the encoder's Ethernet port to a network switch. Configure the encoder to stream the laptop's input to the network.

## 6—Administrative Functions

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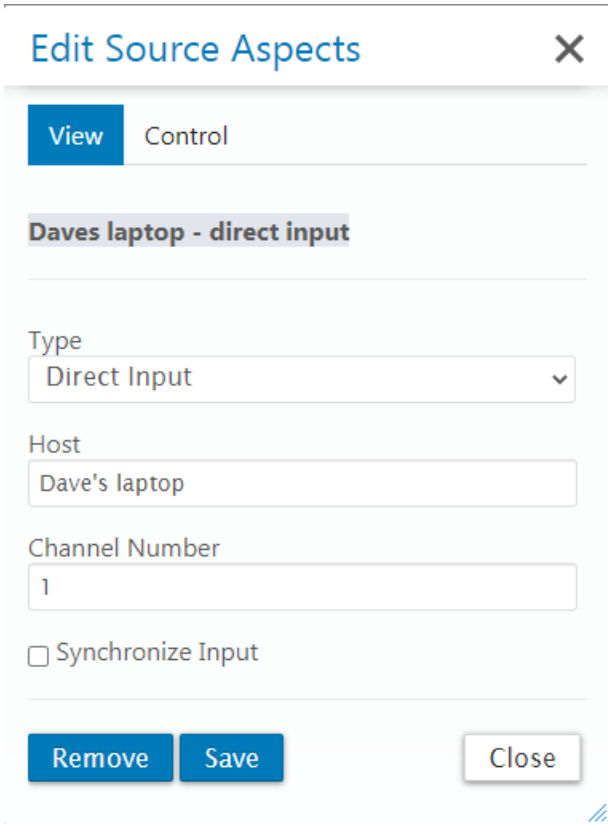
4. Create a Direct Input shared source for the laptop in the Administration UI.

5. While still on the edit page for the Direct Input source, change the “Type” field to “Streaming Video”. Enter the URL and adjust any other streaming parameters, click Save, then Close.

Now when you view the shared source, you will see both a Direct Input and Streaming Video aspect.

### Delete an Input Type

To delete a Type, again edit the source. Change the “Type” field to the type you want to remove, then click on the Remove button at the bottom. Click on the Close button to exit (there is no need to hit the Save button).



**Figure 6.19 - Select Input Type and Click Remove**

## 6—Administrative Functions

### 6.2.4 Source Management Icons

Next to each Source name are three icons. They allow the following functions:



**Figure 6.20 - Source Management Icons**

#### Source Description Panel

When a source is highlighted in the left panel, a summary of chosen options is presented in the right panel.

**Available Sources:**

Search

Shared Sources +

+

Select: All | None    Tag: + Add | ⚙ Manage | 🔍 Browse

<input type="checkbox"/> STREAM1	⋮   ✎   🗑
<input checked="" type="checkbox"/> STREAM2	⋮   ✎   🗑
<input type="checkbox"/> STREAM3	⋮   ✎   🗑
<input type="checkbox"/> STREAM4	⋮   ✎   🗑
<input type="checkbox"/> STREAM5	⋮   ✎   🗑
<input type="checkbox"/> STREAM6	⋮   ✎   🗑

**STREAM2**

---

**View's Aspect:**

Property	Value
Type	Streaming Video
URL	rtsp://root:jupiter@10.7.7.102/mpeg4/media.amp
RTSP Protocol Settings	UDP Multicast
Stream Caching (ms)	150
Fusion Catalyst Decoding Mode	Hardware Decoding

**Figure 6.21 - Source Description Panel**

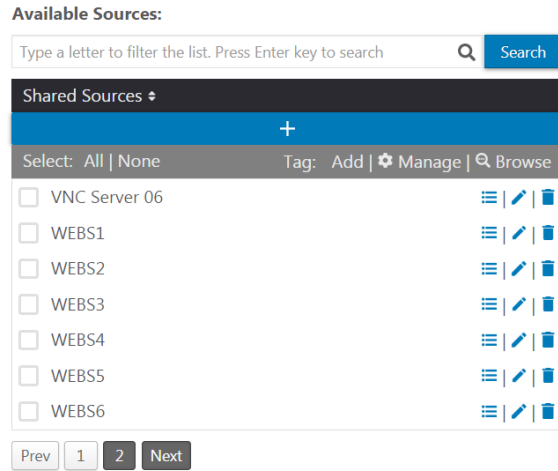
## 6—Administrative Functions

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### 6.2.5 Pagination

Pagination buttons will appear if the Sources list has more than 50 items.

See the following screenshot for an example.

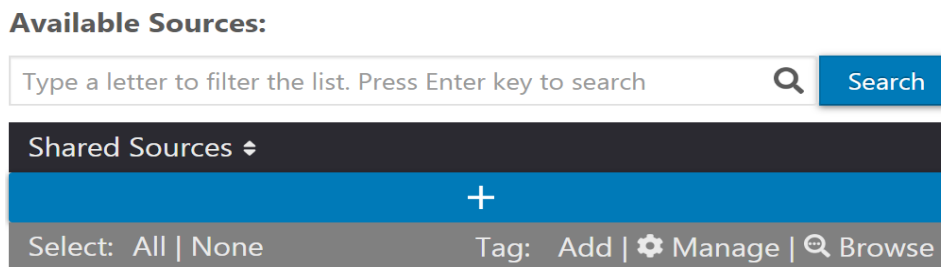


**Figure 6.22 - Pagination**

### 6.2.6 Tags

As shown in the photo below, Add, Manage, and Browse tag options appear above the Available Sources list. Tags are used to further identify sources. Multiple tags can be assigned to a source. For example, a group of streaming cameras might be tagged as "Route 24". A group of banking websites might be tagged "Banks". A group of Direct Inputs might be tagged "Control Rm – bldg. B".

The tags will then make it easy to call up the group of sources.



**Figure 6.23 - Tag Options for Sources**



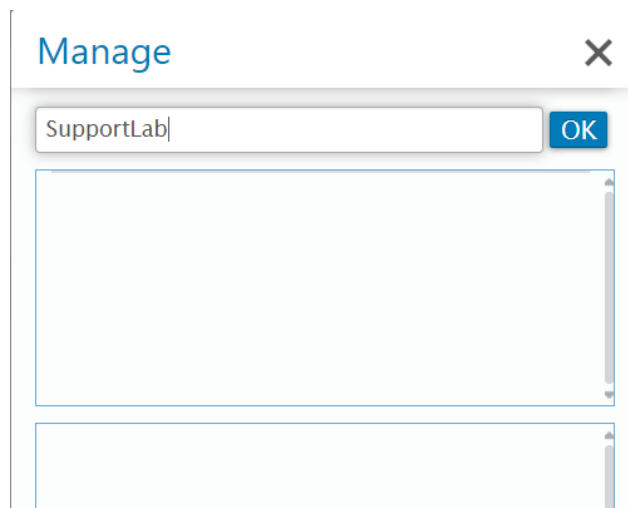
## 6—Administrative Functions

---

### 6.2.6.1 Create Tags

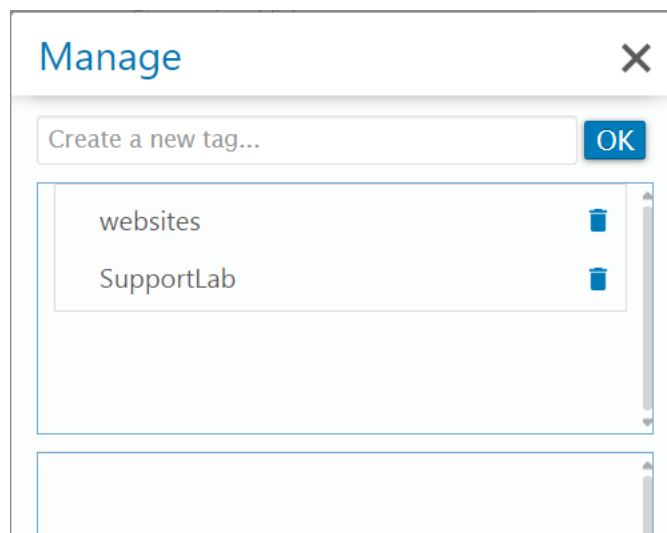
To create a tag:

1. Click on the Manage link. The “Manage Tag” dialog box will appear.



**Figure 6.24 - Adding Tags**

2. Enter a new tag, then click on the OK button. Enter other tags if desired. When done, click on Close. In the example below, we added tags for “websites” and “SupportLab”.



**Figure 6.25 - Two Tags Added**

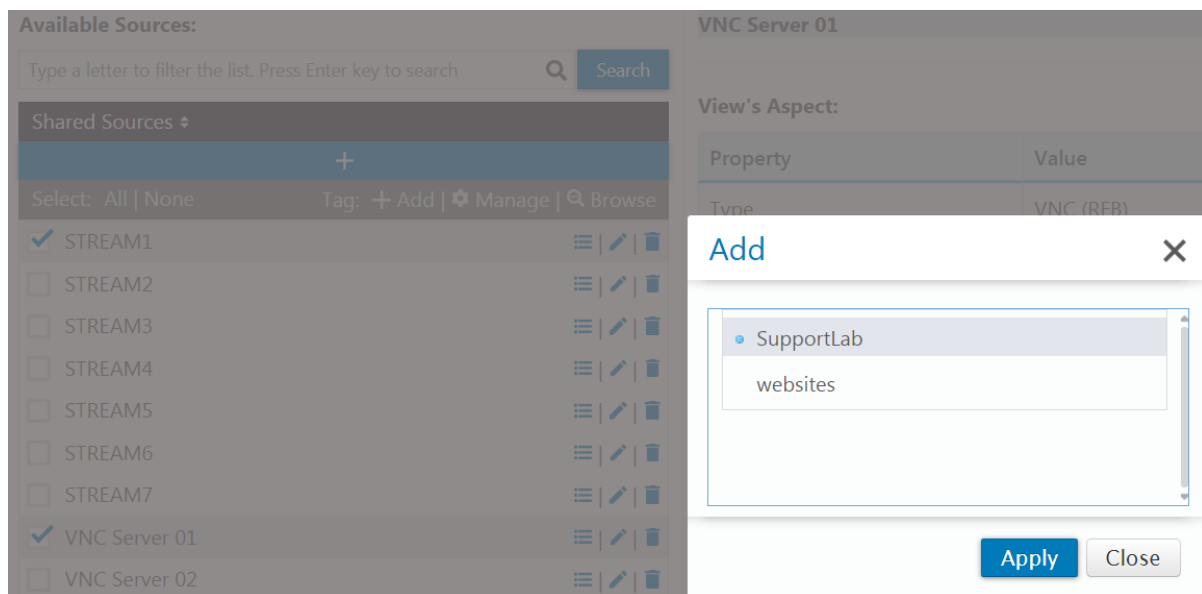
## 6—Administrative Functions

---

### 6.2.6.2 Assign Tags

To assign a tag to one or more sources:

1. Select one or more sources using the checkboxes in front of their names. A + icon will appear in front of the Add link
2. Click on the +Add link
3. Select the tag name, then click Apply button
4. Click Close when done.



**Figure 6.26 - Two Sources Being Assigned to “SupportLab”**

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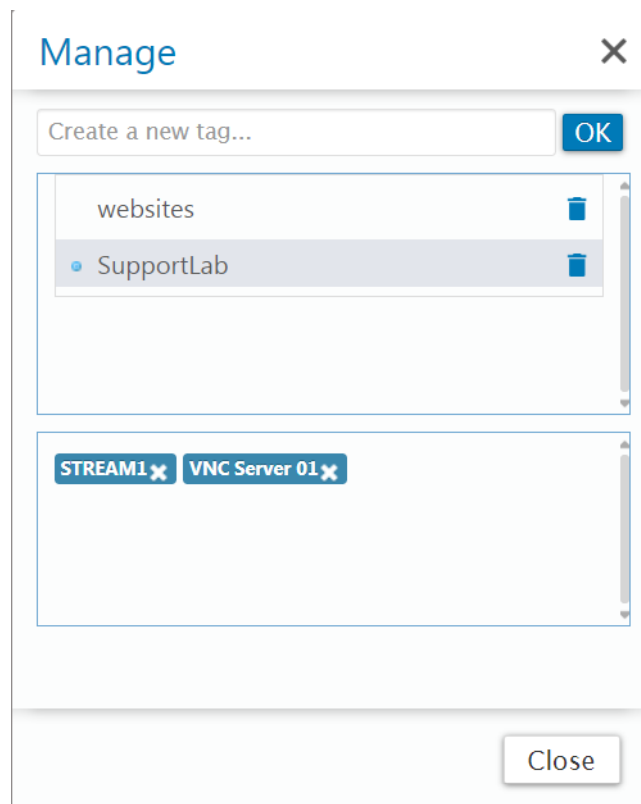
---

### 6.2.6.3 Manage Tags

To see what sources have been assigned to a Tag:

1. Click again on the Manage link. The Manage tags dialog box will appear with tag names.
2. Click on a tag name and the associated sources will appear in the box below.

In the example below, two of our sources have been tagged as "SupportLab".



**Figure 6.27 - Two Sources Tagged as "SupportLab"**

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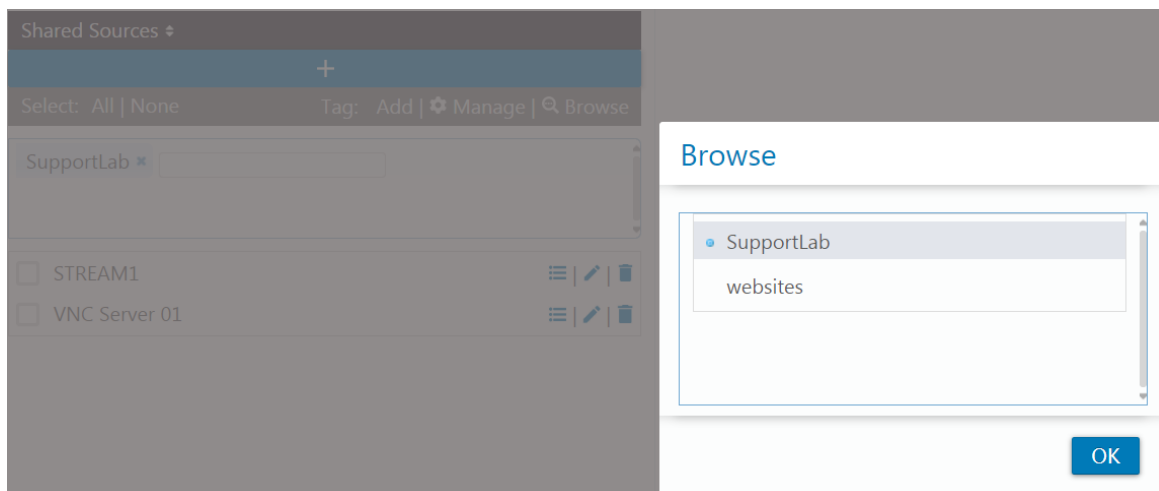
---

### 6.2.6.4 Browsing Tags

The Browse link lets an administrator see tagged sources in the main list of sources. This allows the administrator to work exclusively with the tagged sources.

#### To Browse Tags:

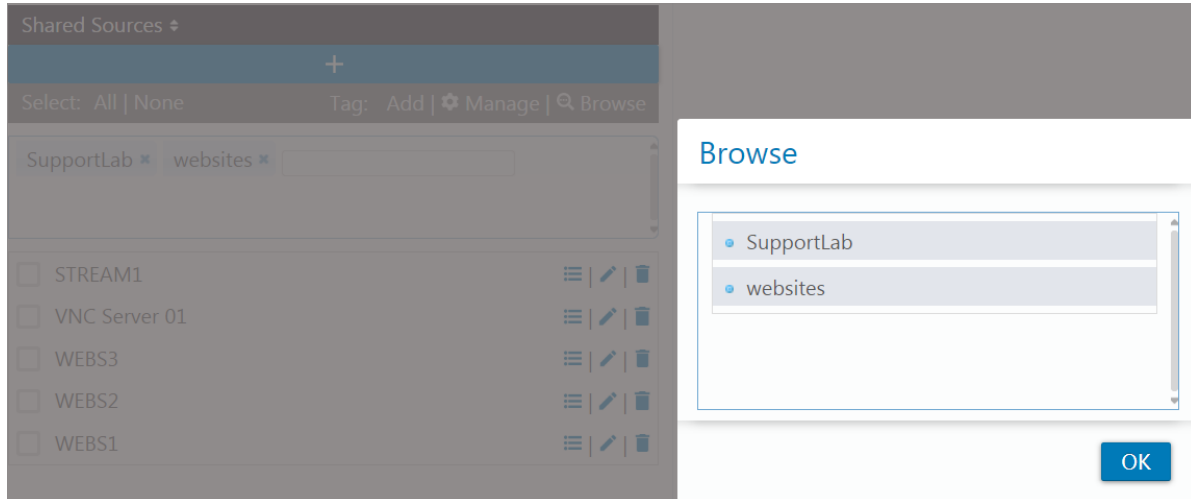
1. Click on the Browse link. The Browse dialog box will appear.
2. Click on one of the tags and only the associated sources will be shown in the main list of sources.
3. Click on another tag and the associated sources will be shown in the main list.
4. Click on the same tags again to “uncheck” them.



**Figure 6.28 - Browsing One Tag**

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**Figure 6.29 - Browsing Two Tags**

To exit from Browsing mode, click on the x marks next to the tags in the box above the sources.

## 6—Administrative Functions

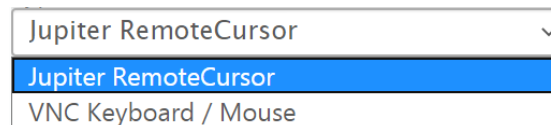
---

### 6.2.7 Editing Source/Wall aspect — Control

#### 6.2.7.1 Control Configuration

The Control aspect enables control a Canvas source using a remote keyboard and mouse.

There are two Control choices:



Jupiter Remote Cursor Server is installed with the Canvas Client for Catalyst and included with a Complete Installation of Canvas Client for PC. It is used on a Catalyst to control the wall desktop from a PC. Manual installation is needed only on Source PC connected to a Direct Input.

When configuring a VNC Source, select VNC Keyboard / Mouse.

When the source is launched, it is connected to the VNC server and automatically put in K/M mode.

When the source window is closed, K/M control ends.


---

NOTE: VNC Server must be installed on the VNC source PC per [Appendix C. VNC for Canvas](#) on page 369.

---

Features defined in the VNC server on the source are available. The Real VNC server, for example, comes with a rich feature set, see [Appendix C.C. VNC for Canvas](#) on page 369.

To edit the Control aspect of a source:

1. Highlight the Source name and click the Edit Icon that appears to the right of it. 
2. The Edit Source Aspects dialog appears.
3. Click on the Control tab.
4. Select the desired type of K/M control from the drop-down menu in the Type field.
5. Enter the hostname or IP address of the computer in the Host field. In the case of "VNC Keyboard/Mouse", enter the VNC password.
6. Click the Save button.

## 6—Administrative Functions

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### 6.2.7.2 VNC Operation

---

**CAUTION:**

Make sure that the SSH Server is installed and running on the VNC source.

---

Jupiter Remote Cursor is similar in operation to the Canvas Remote Cursor:

When a source is opened, the user right-clicks on the window and selects Activate Remote Cursor. Canvas will execute a Ctl+ALT+C operation to start the remote K/M session, place mouse control on the source's video screen, and lose K/M control on the Canvas client.

While the K/M session is active, the user can press Ctl+Alt+Backspace to send a Ctl+Alt+Del (which launches the Windows Task Manager on the source).

To end the remote K/M session, the user presses Ctl+ALT+C. This returns K/M control to the Canvas client.

---

Reminder: Only the VNC password is encrypted when VNC sources are displayed. Sending sensitive text information within a VNC session (e.g., another password) is not recommended.

---

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### 6.2.7.3 VNC Settings on Admin Source Page

When the Control aspect of a source has been set to VNC Keyboard/Mouse, the source will be displayed as follows on the Sources page of the Administration UI:

**Available Sources:**

Q Search

Shared Sources +

Select: All | None Tag: + Add | Manage | Browse

- STREAM1 ⋮ | ✎ | 🗑
- STREAM2 ⋮ | ✎ | 🗑
- STREAM3 ⋮ | ✎ | 🗑
- STREAM4 ⋮ | ✎ | 🗑
- STREAM5 ⋮ | ✎ | 🗑
- STREAM6 ⋮ | ✎ | 🗑
- STREAM7 ⋮ | ✎ | 🗑
- VNC Server 01 ⋮ | ✎ | 🗑
- VNC Server 02 ⋮ | ✎ | 🗑
- VNC Server 03 ⋮ | ✎ | 🗑
- VNC Server 04 ⋮ | ✎ | 🗑
- VNC Server 05 ⋮ | ✎ | 🗑
- VNC Server 06 ⋮ | ✎ | 🗑
- WEBS1 ⋮ | ✎ | 🗑
- WEBS2 ⋮ | ✎ | 🗑
- WEBS3 ⋮ | ✎ | 🗑
- WEBS4 ⋮ | ✎ | 🗑
- WEBS5 ⋮ | ✎ | 🗑
- WEBS6 ⋮ | ✎ | 🗑

**VNC Server 01**

---

**View's Aspect:**

Property	Value
Type	VNC (RFB)
Host	vncserver01
Port	5900
Password	
Use Crop Area	false
Crop Area Left	0
Crop Area Top	0
Crop Area Width	0
Crop Area Height	0
Enable Automatic VNC Reconnection	true
Use SSH Tunnel	false
SSH Username	
SSH Password	
SSH Port	22

**Remote K/M's Aspect:**

Property	Value
Type	VNC Keyboard / Mouse
Host	10.4.6.104
Port	5900
Password	
Use SSH Tunnel	false
SSH Username	
SSH Password	
SSH Port	22

**Figure 6.30 - VNC Source with VNC Control aspect**



## 6—Administrative Functions

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### 6.3 Administration—Canvases Tab

Canvases are frameworks for holding sources in specific arrangements, usually defined by the end users. Once Sources have been created, the Canvas Administrator must:

1. Create the Canvases.
2. Assign Users and Groups permissions to access the Canvases.

Users will access Canvases and then modify Sources and other Objects. Refer to [Chapter 7. Canvas Client](#) for details.

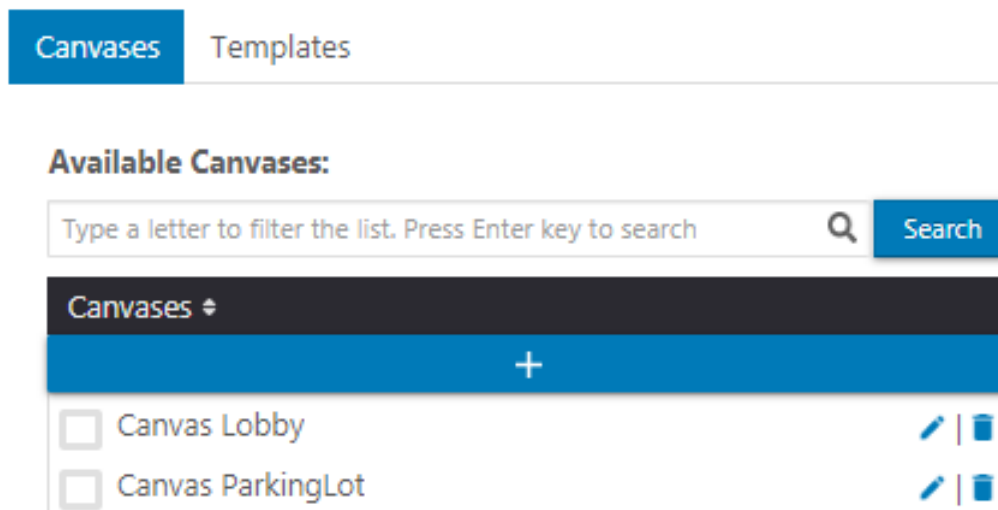
---

**NOTE:** The Administration UI cannot be used to add Sources to a Canvas. The Canvas Client tool is the only way to add or edit Sources on a Canvas.

---

#### 6.3.1 Adding Canvases:

1. Click the + icon at the top of the list.



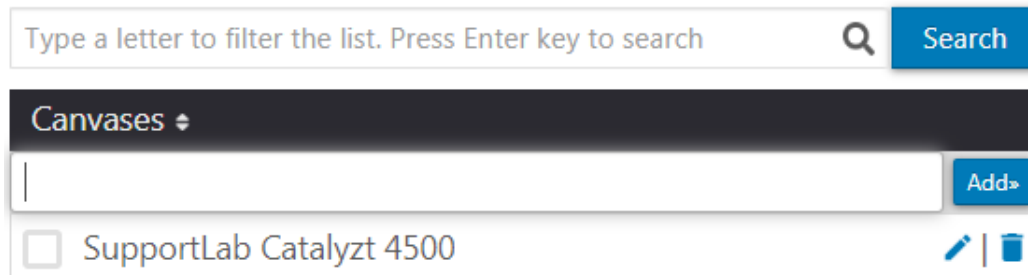
**Figure 6.31 - Click + to Add New Canvas**

2. Add a name in the field, then click the blue Add button next to the Name field. In the screenshot below, a Canvas for an FC4500 wall controller has been added.

## 6—Administrative Functions



---

### Available Canvases:



Type a letter to filter the list. Press Enter key to search

Canvases ▾

SupportLab Catalyzt 4500  

**Figure 6.32 - New Canvas Added**

3. Click the Pen icon to the right of the Canvas name to rename the Canvas. Click the Apply button for the change to take effect.
4. Click the Garbage Can icon to delete the Canvas. Click the Remove button to apply the change.

## 6—Administrative Functions

---

### 6.4 Creating Canvas Templates

A Canvas template stores a Canvas design (i.e., a layout). A template can be applied to any Canvas object to change the design of the Canvas to the design of the template. Since applying a template modifies the design of the Canvas object, permission for editing the Canvas object is necessary.

Canvas templates cannot be created in the Administration UI. They are created by users while editing a Canvas.

---

**Note** When the Canvas content is replaced by a template at the root level, existing annotations become meaningless. It is crucial to erase existing annotations before applying a different template to a Canvas.

The Client user is responsible for erasing existing annotations before a new Canvas template is applied.

---

#### 6.4.1 Canvas Template Conditions

- A template is created (exported) from the current Canvas design on the "Client User Interface" under the Edit Mode tab.
- Users with Canvas Edit permissions can save Template objects. The template object is automatically promoted to Preferred template for this Canvas object.
- Any user with Edit permissions for the Canvas object can change the preferred/non-preferred attribute of a template object for this Canvas.

---

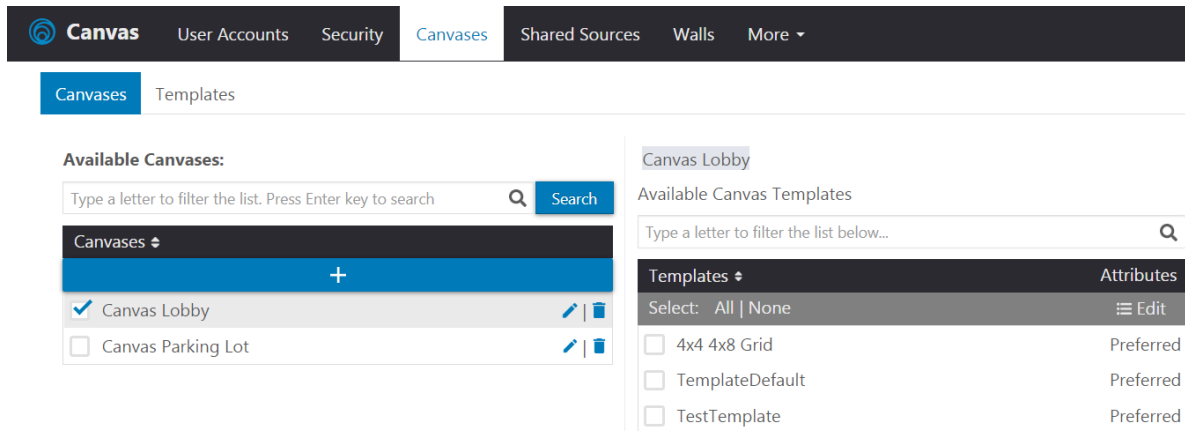
**Note** Edit permission on the Canvas does not mean that the template is editable. While the Client user can create templates based on editable Canvases, the created template itself cannot be edited since the template works like a snapshot.

---

- Users cannot Delete/Overwrite/Rename template objects. Users can only save new template objects or change Preferred/ Non-preferred attribute. Only Canvas Administrators can Delete/Rename/Copy template objects. The Admin cannot edit the contents of the template.
- Once a Canvas Template is created it appears under the "Available Canvas Templates" list.

## 6—Administrative Functions

Administration UI—>Canvases—>Templates Tab—>Available Canvas Templates list.

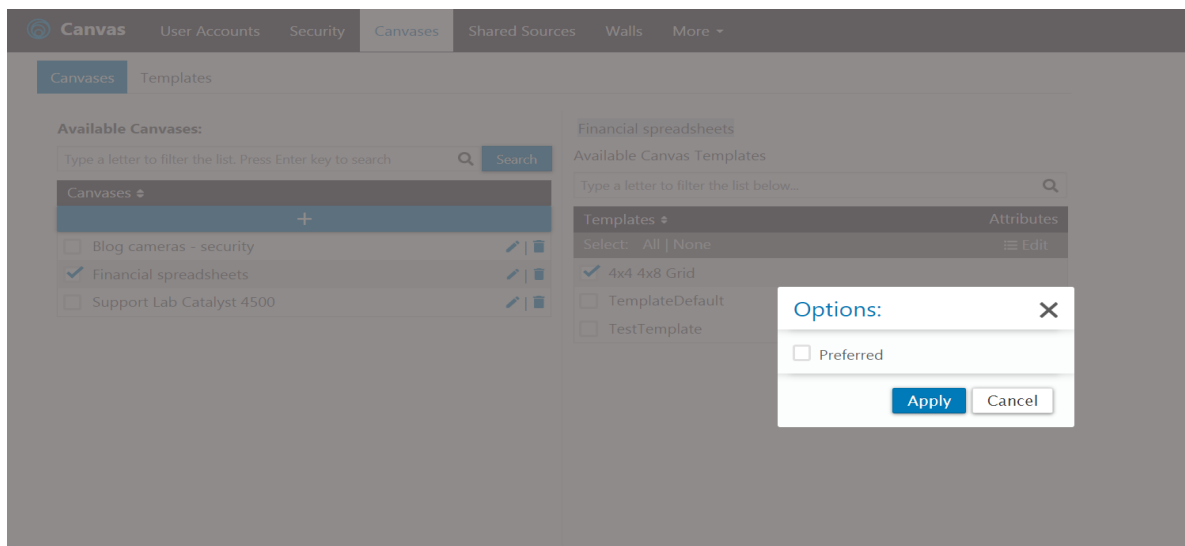


**Figure 6.33 - Available Canvas Templates**

### 6.4.2 Preferred Template Option

For each Canvas object, a Preferred template can be applied as an option. Designating a template as Preferred is similar to adding an item to a favorites list.

Preferred templates distinguish appropriate templates (especially in a long list of templates) based on the purpose or audience for the Canvas.



**Figure 6.34 - Preferred Template Option**

## 6—Administrative Functions

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### *Classifying a Canvas Template as Preferred*

1. Click the check box next to the desired Canvas Template.
2. An Option dialog appears with Preferred showing as the chosen option.
3. Click the Apply button to apply the Preferred option or click
4. Cancel to close the Option dialog.

## 6—Administrative Functions

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### 6.5 Administration—Walls Tab

The walls tab is used to create and edit Mimic walls.

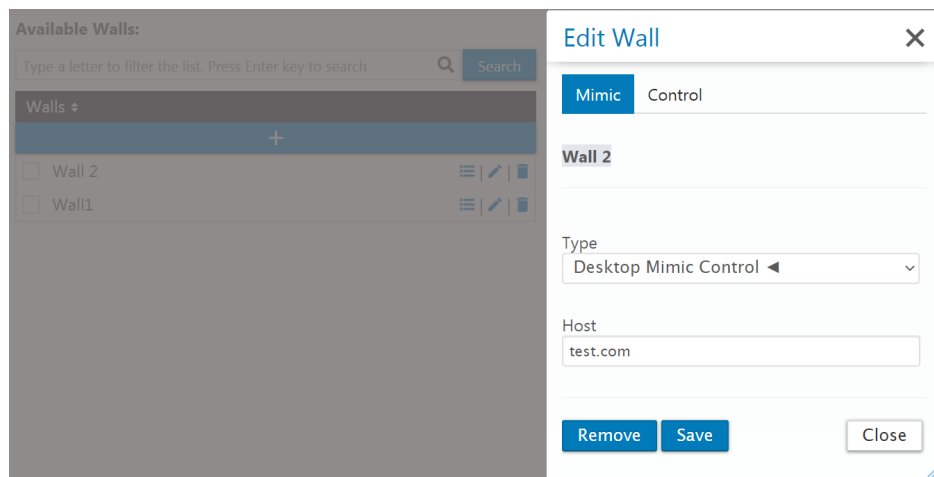
#### 6.5.1 Adding a Wall/Mimic Object

There are two Types of Mimics:

- Canvas Mimic Control – To control Canvas Wall/Mimic  
(A CRS-5K requires separate Mimic Sources for control & Canvas SimpleShare. This is automatically created when configured from automatic configuration)
- PixelNet Mimic Control - To control a PixelNet Wall (only works with PixelNet product)

Creating a Wall object presents two aspects: Mimic aspect and a Control aspect. To mimic a wall, the selected type is "Desktop Mimic Control" and the Host is either an IPAddress or a hostname.

1. Highlight the Source name and click the Edit Icon that appears to the right of it.
2. The Edit Wall dialog appears.
3. Click on the Mimic tab.



**Figure 6.35 - Edit Source Aspects Dialog—Mimic Tab**

4. Enter the name or IP Address of the computer in the Host field.
5. Click the Save button.

See [Section 8.7.6 Layouts in the Administration UI](#) on page 291 for Mimic Layout editing in the Administration UI.

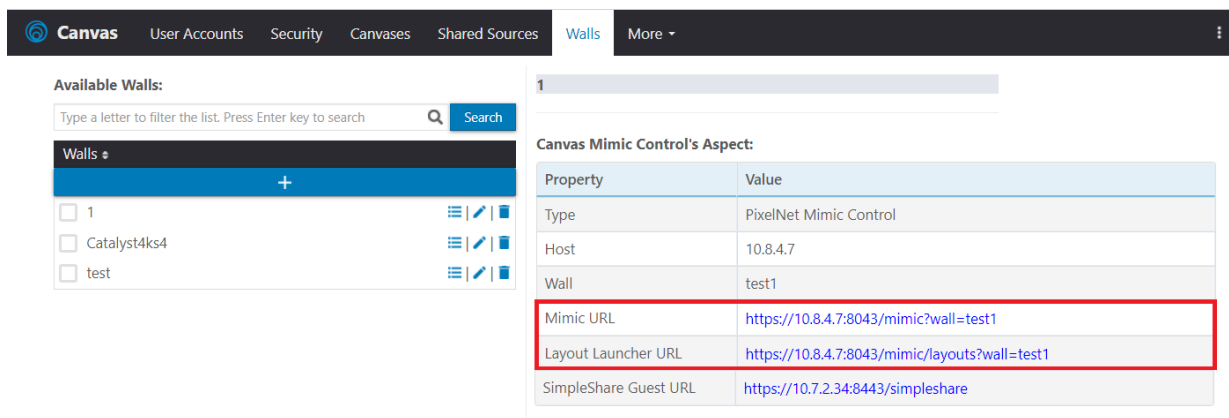
## 6—Administrative Functions

---

There is usually no need to modify these settings.

### 6.5.2 Opening a Mimic Wall

A mimic wall can be accessed by clicking on the links shown below. These links will show up after a wall has been created.



Property	Value
Type	PixelNet Mimic Control
Host	10.8.4.7
Wall	test1
Mimic URL	<a href="https://10.8.4.7:8043/mimic?wall=test1">https://10.8.4.7:8043/mimic?wall=test1</a>
Layout Launcher URL	<a href="https://10.8.4.7:8043/mimic/layouts?wall=test1">https://10.8.4.7:8043/mimic/layouts?wall=test1</a>
SimpleShare Guest URL	<a href="https://10.7.2.34:8443/simpleshare">https://10.7.2.34:8443/simpleshare</a>

**Figure 6.36 - Mimic Links**

#### 6.5.2.1 Access Walls and Layout Launcher using Server Hostname

1. Open in new window
2. Go to the URLs:
  - For Walls: <https://<CanvasServerHost>/Canvas/Wall/<WallName>>
  - For Layout Launcher: <https://<CanvasServerHost>/Canvas/Layouts/<WallName>>
3. Users can go directly to this URL without going to the main client. If not logged in, the user will be prompted for authentication to maintain security

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### 6.6 Administration—Permissions Tab

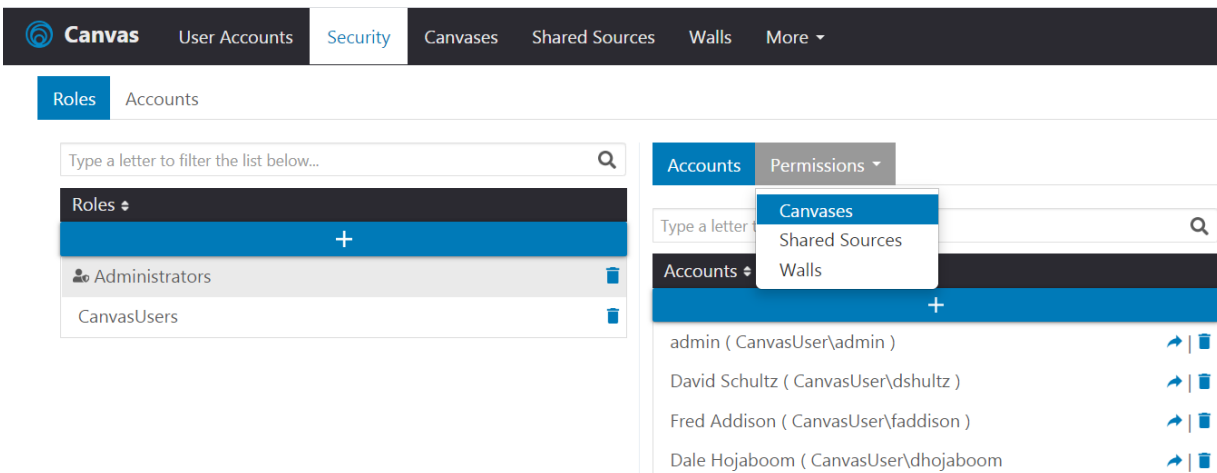
The Permissions Tab can be found on the Security Page.

After Sources and Canvas have been created, the administrator has access to all Canvas Objects without assigning any permissions. The administrator **MUST** assign Object permissions to User Roles to provide access. If permissions are not assigned, Sources or Canvases will be not visible to users.

Canvas provides strong security by requiring an administrator to specifically grant permission to View, Edit, and/or Annotate Sources and Canvases.

#### 6.6.1 Selecting Canvases or Sources

1. Return to the Security tab of the Administration UI, then click on the Permissions tab in the right panel.
2. The Permissions tab has a drop-down menus. Clicking on Canvases, Sources, or Walls returns a list of the objects. Above the list is a search field for locating specific items -- as letters are typed in, Canvas will display a list of matching choices.



**Figure 6.37 - Permissions Tab Drop-Down Menu**

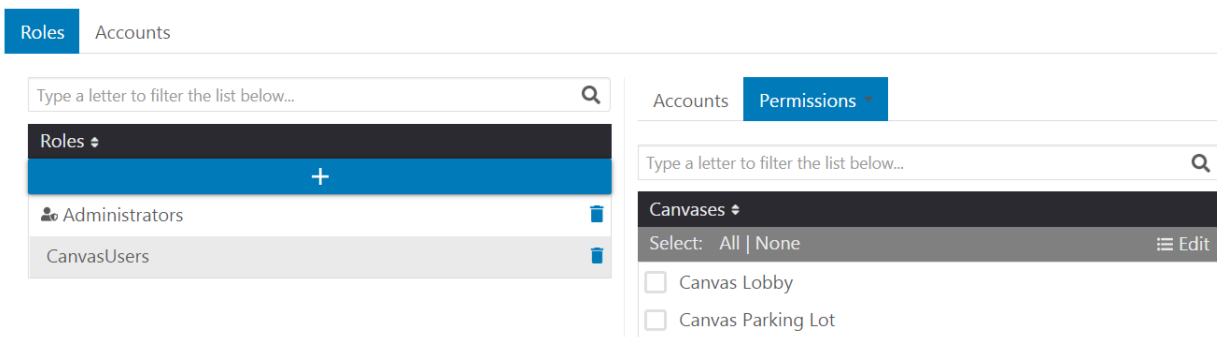


## 6—Administrative Functions

### 6.6.2 Creating Roles for a Purpose

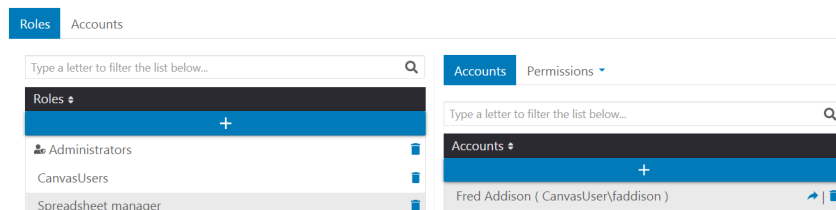
Permissions are assigned to sources & canvases based on the Roles selected in the left panel. Permissions cannot be assigned to individual Accounts. If an individual account needs particular permission for a canvas or source, a role must be created for that account.

1. In the screenshot below, the CanvasUsers role has been selected. Any permissions granted to the Canvases will be granted for all users in the CanvasUsers role.

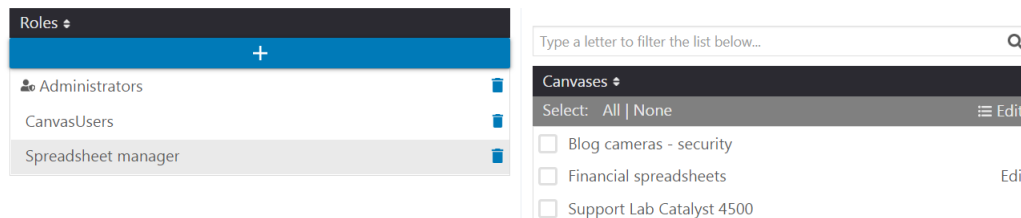


**Figure 6.38 - Permissions—Canvases—Everyone in Role**

2. In the screenshot below, the “Spreadsheet manager” role has been created. Its sole member is Fred, and Fred is to be the only person who can Edit the “Financial spreadsheets” Canvas. All other users can View and Annotate the “Financial spreadsheets” Canvas.

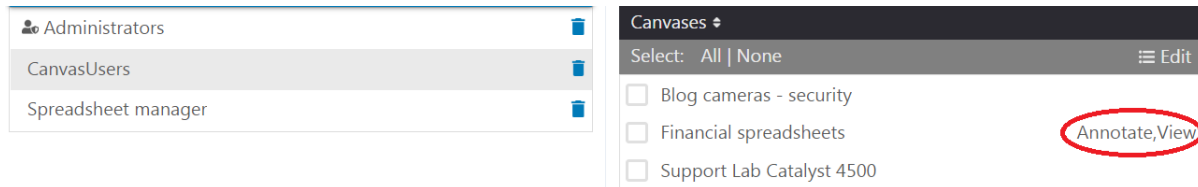


**Figure 6.39 - Spreadsheet Manager Role Created**



**Figure 6.40 - Edit Rights Given to Spreadsheet Manager**

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**Figure 6.41 - View & Annotate Rights Given to General Users**

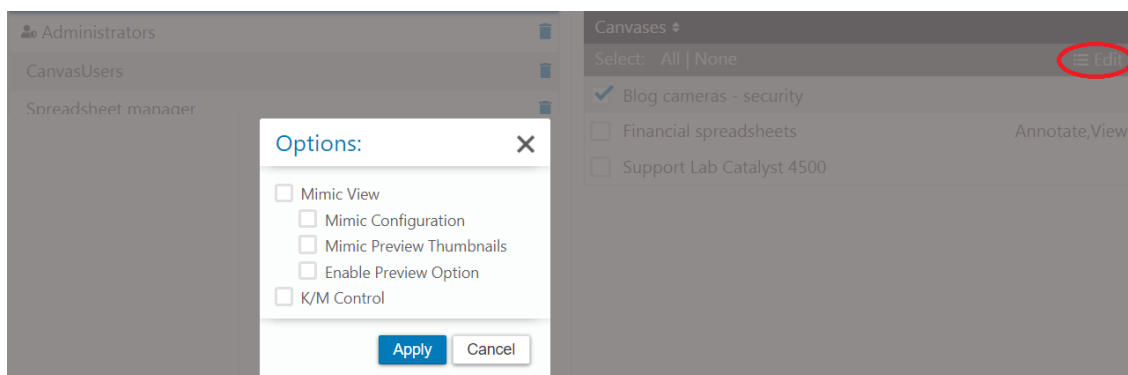
### 6.6.3 Selecting Multiples When Assigning Permissions

Multiple selection of Canvases or Sources is possible using the check boxes next to each object. Selecting all or none is possible with a single click on the All or None links above the Sources or Canvases list.

Multiple selection of Roles is not possible. To give users from different roles permissions over a Canvas, Source, or Wall, either assign permissions to roles one at a time, or create a new role and include all the appropriate members.

### 6.6.4 Adding Permissions to a Canvas, Source, or Wall

1. Select the check box adjacent to the desired Canvas, Source, or Wall in the list.
2. Click the Edit link above the list. The Options dialog box appears.



**Figure 6.42 - Edit Role Permissions for a Canvas**

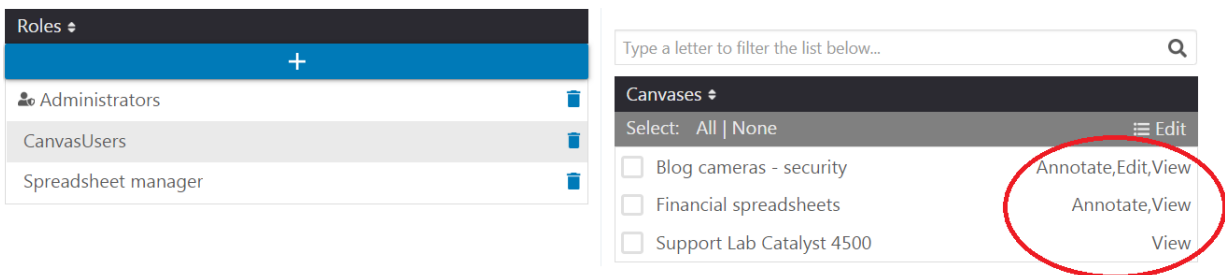
3. Choose the role permissions by checking the boxes next to View, Edit, and Annotate.
4. Click Apply.

## 6—Administrative Functions

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### 6.6.5 Viewing Permissions For a Role

- Highlight a Role in the left panel of the Security tab.
- Select the Permissions tab in the right panel of the Security tab.
- Choose either Canvases or Sources.
- The permissions for all Canvases or Sources will be shown.



**Figure 6.43 - Complete View of Permissions for Role**

## 6—Administrative Functions

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### 6.7 Administration — The More Tab

#### 6.7.1 Active Sessions

The Canvas Administrator will use the Active Sessions tab to monitor currently active Canvas sessions. Active Sessions are itemized in a list:

Floating License Pool - which consists of licenses that can be picked up by users on the fly.

Named User License Pool - which consists of users with designated licenses.

##### Floating Licenses Pool Active Sessions: 0 out of 10

User Name	Device Name	Session Type
-----------	-------------	--------------

##### Named User Licenses Active Sessions: 0

User Name	Device Name	Session Type
-----------	-------------	--------------

##### Canvas Touch/CRS-4K Licenses Pool Active Sessions: 1 out of 2

User Name	Device Name	Session Type
-----------	-------------	--------------

**Figure 6.44 - Active Sessions**

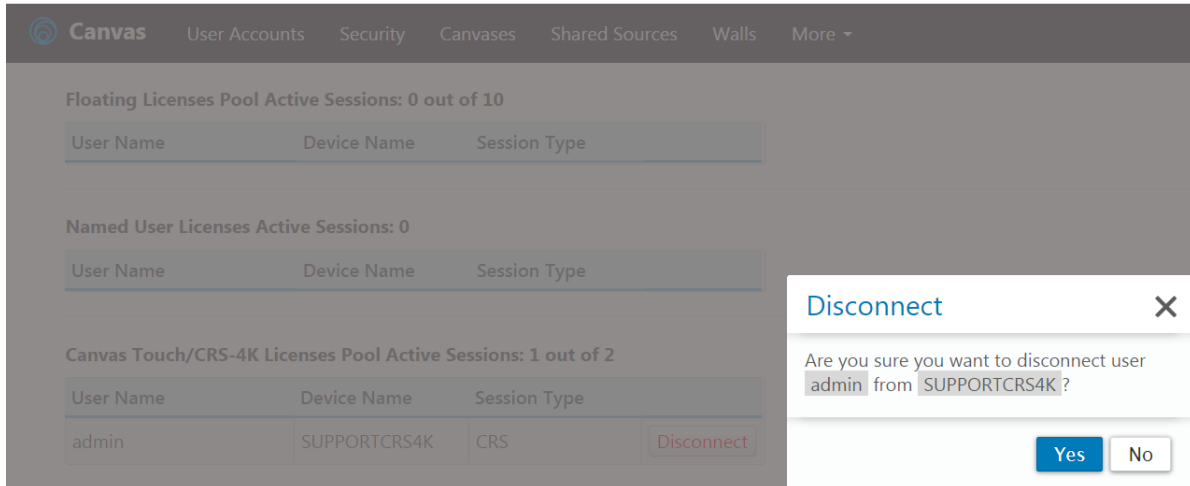
#### 6.7.1.1 Disconnecting Active Sessions

The Admin can disconnect any active session at any time.

1. To disconnect a particular active session, click the Disconnect button corresponding to that session.
2. A Disconnect confirmation dialog will appear. Click Yes to confirm the disconnection or No to close the dialog.

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**Figure 6.45 - Disconnect Active Session**

### 6.7.2 Jupiter Mobile Servers

The Media Servers tab (shown below) is only relevant to Jupiter Mobile servers and Canvas Mobile clients. Refer to [Chapter 9. Jupiter Mobile Server](#) and [Chapter 10. Canvas Mobile Client](#).

#### Media Servers



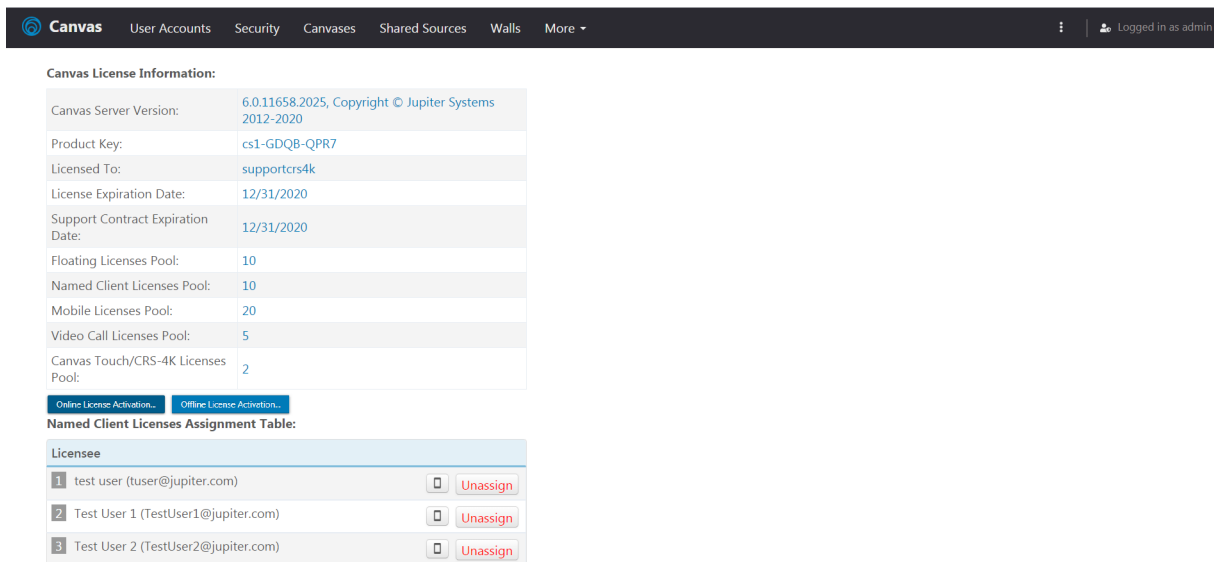
**Figure 6.46 - Media Servers List**

## 6—Administrative Functions

---

### 6.7.3 Licenses

The administrator can activate their canvas server license from the License tab. Administrators can also manage license assignment from this tab.



**Canvas License Information:**

Canvas Server Version:	6.0.11658.2025, Copyright © Jupiter Systems 2012-2020
Product Key:	cs1-GDQB-QPR7
Licensed To:	supportcrs4k
License Expiration Date:	12/31/2020
Support Contract Expiration Date:	12/31/2020
Floating Licenses Pool:	10
Named Client Licenses Pool:	10
Mobile Licenses Pool:	20
Video Call Licenses Pool:	5
Canvas Touch/CRS-4K Licenses Pool:	2

Online License Activation... Offline License Activation...

**Named Client Licenses Assignment Table:**

Licensee		
1 test user (tuser@jupiter.com)	<input type="checkbox"/>	Unassign
2 Test User 1 (TestUser1@jupiter.com)	<input type="checkbox"/>	Unassign
3 Test User 2 (TestUser2@jupiter.com)	<input type="checkbox"/>	Unassign

**Figure 6.47 - Canvas License Page**

---

**Note:** When license expired and administrator logs in, the web client lands on the license page and user is allowed to enter a new license.

---

There are two ways to activate a Canvas license:

- Online Activation
- Offline Activation

If the Canvas system is connected to the Internet, continue with the following section for Online Activation.

## 6—Administrative Functions

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### 6.7.3.1 Online Activation

1. Click Online License activation and the following dialog will show up.

**Online License Request Information:**

Product Key:	*	<input type="text" value="AB1-VBCX-5KB4"/>
Licensed To:	*	<input type="text" value="Canvas Admin"/>
Contact Person:		<input type="text" value="Canvas Admin"/>
Email Address:		<input type="text" value="canvasadmin@jupiter.com"/>
Phone Number:		<input type="text"/>
Mailing Address:		<input type="text"/>

**Figure 6.48 - Online License Activation**

2. Enter the Product Key provided with the system. Enter the Registration Information in the respective fields. In the Licensed To field enter the appropriate Company, Group, or person's name to whom the License will be issued.
3. After entering all the information click Activate Online.

## 6—Administrative Functions

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### 6.7.3.2 Offline Activation

1. Click Offline License activation and the following dialog will show up.

**Offline License Request Information:**

Product Key:	*	<input type="text" value="AB1-VBCX-5KB4"/>
Licensed To:	*	<input type="text" value="Canvas Admin"/>
Contact Person:		<input type="text" value="Canvas Admin"/>
Email Address:		<input type="text" value="canvasadmin@jupiter.com"/>
Phone Number:		<input type="text"/>
Mailing Address:		<input type="text"/>
To obtain a License Activation File, please copy the above License Request Information to the Clipboard and email to: CanvasLicense@jupiter.com		
<input type="button" value="Copy Request To Clipboard"/>		<input type="button" value="Import License Activation File"/>

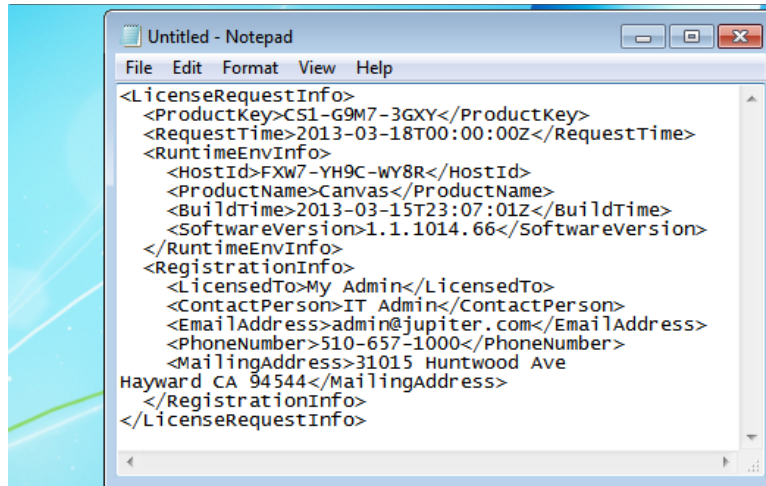
**Figure 6.49 - Offline License Activation**

2. Enter the Product Key with the system. Enter the Registration Information in the respective fields. In the Licensed To field enter the appropriate Company, Group, or person's name to whom the License will be issued.
3. After entering all the information click the Copy Request To Clipboard button.
4. Open Notepad or a similar text editor and paste the copied request. Save it on a storage device (USB Drive or disc)



## 6—Administrative Functions

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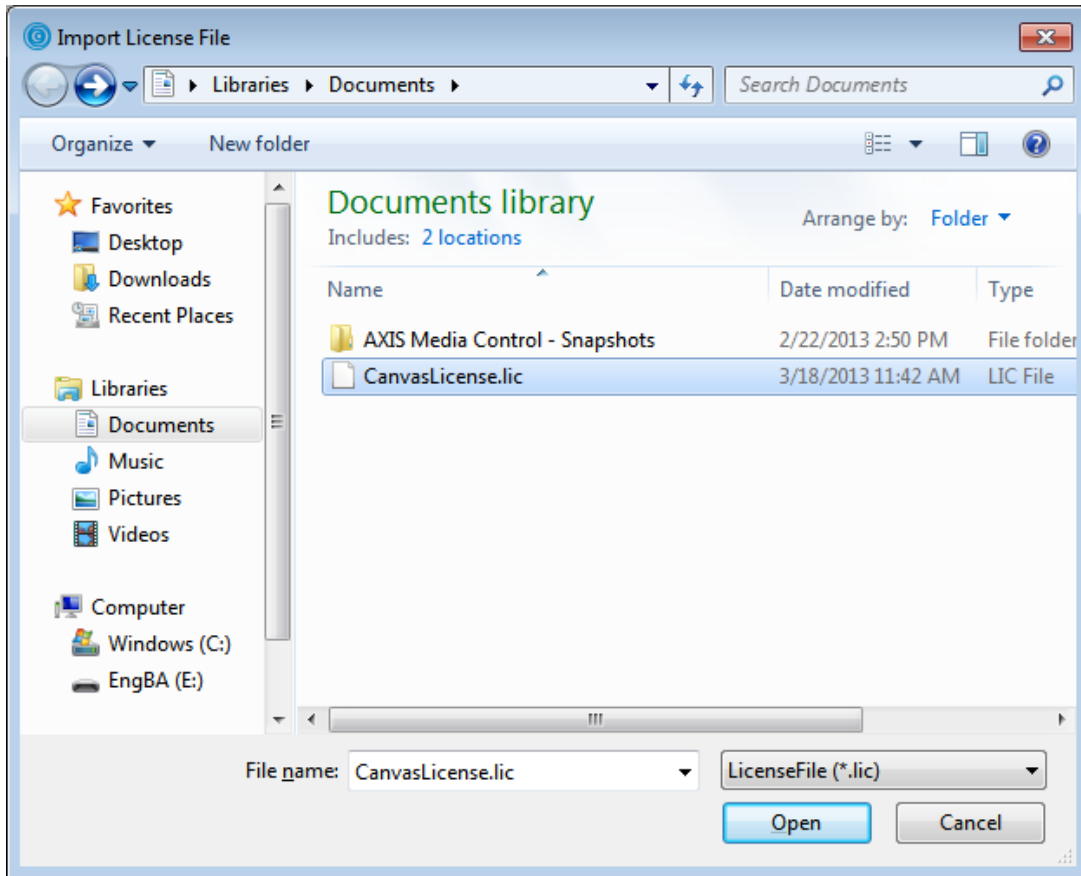


**Figure 6.50 - Paste Clipboard to Text File**

5. Bring the storage device with the saved text file to a different computer with Online Connectivity and send the Text file (with the License Registration information) to Jupiter Systems: CanvasLicense@jupiter.com
6. Upon receiving the License Key File from Jupiter, Save/Download the file to the storage device.
7. Return to the Canvas system where License Pages was accessed earlier and select the Import License Activation File button.
8. In the Import License File window that appears, with the CanvasLicense.lic file name selected, click Open.

## 6—Administrative Functions

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**Figure 6.51 - Import License File**

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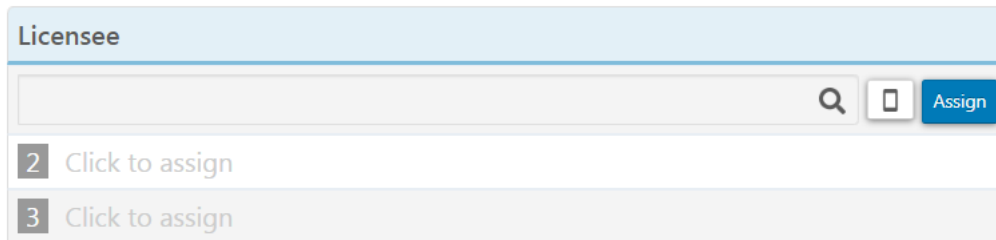
---

### 6.7.3.3 Assigning Named Client Licenses

To assign Named Client Licenses:

1. Click on the “Click to assign” link on the next numbered row in the Named Client Licenses Assignment Table.

**Named Client Licenses Assignment Table:**

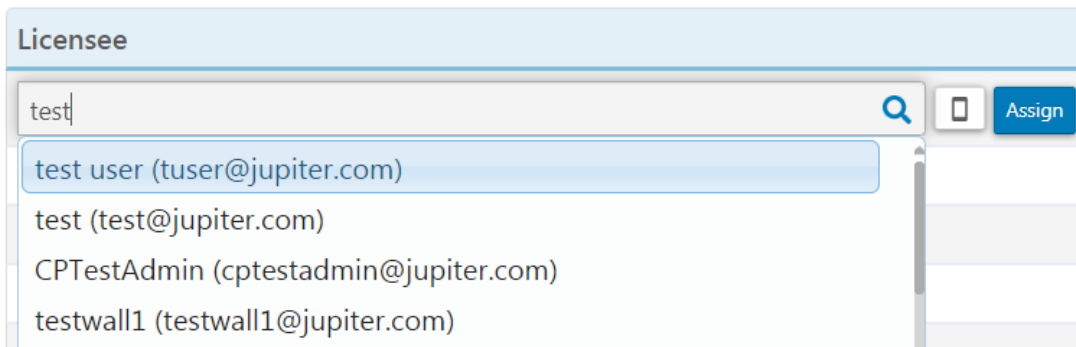


Licensee	
<input type="text"/>	<input type="button" value="Assign"/>
2	<a href="#">Click to assign</a>
3	<a href="#">Click to assign</a>

**Figure 6.52 - Click to Assign**

2. Enter the Account Name or select a name by entering the first few characters of their name.

**Named Client Licenses Assignment Table:**



Licensee	
<input type="text" value="test"/>	<input type="button" value="Assign"/>
<ul style="list-style-type: none"><li>test user (tuser@jupiter.com)</li><li>test (test@jupiter.com)</li><li>CPTestAdmin (cptestadmin@jupiter.com)</li><li>testwall1 (testwall1@jupiter.com)</li></ul>	

**Figure 6.53 - Assigning Licenses to Users**

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### 6.7.3.4 Unassigning Named Client Licenses

The Admin can unassign any license at any time.

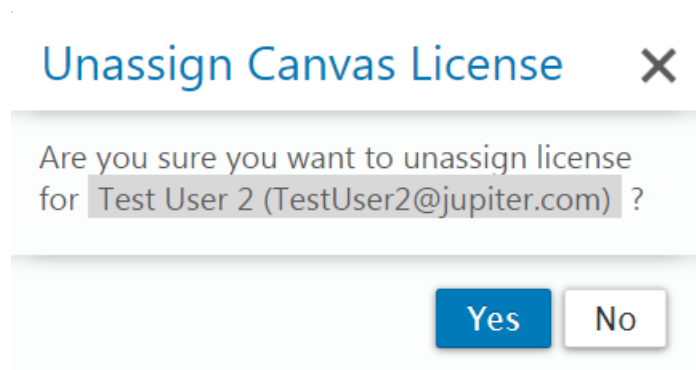
1. Click the Unassign button next to the user account name.

**Named Client Licenses Assignment Table:**

Licensee	
1	Test User 2 (TestUser2@jupiter.com) <span>Unassign</span>
2	Click to assign
3	Click to assign
4	Click to assign

**Figure 6.54 - Unassign Named License**

2. An Unassign confirmation dialog will appear. Click Yes to confirm the license being revoked or No to close the dialog.



**Figure 6.55 - Unassigning Confirmation**

## 6—Administrative Functions

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### 6.7.4 Settings

The Settings page allows the Administrator to customize a variety of Canvas features.

These settings apply to all Canvas users.

The Settings page is divided into sub-sections:

- [Section 6.7.4.1. Screen-Shot Settings](#)
- [Section 6.7.4.2. Email SMTP Settings](#)

#### 6.7.4.1 Screen-Shot Settings

The Screen-shot tab controls the settings for screen captures taken by the Canvas Client.

Settings

Screen-shot Settings | Email SMTP Settings | Media Server Threshold Settings | Chat Settings | Call Settings | Multicast Settings

Use Local Folder:	<input checked="" type="checkbox"/>	ON
Compress Folder:	<input type="checkbox"/>	OFF
Image Format:		PNG
Source Captures:	<input checked="" type="checkbox"/>	ON
Chat Messages:	<input checked="" type="checkbox"/>	ON

**Figure 6.56 - Screen Shot Settings**

- **Use Local Folder:** Choose this option to save the Screen Captures in the default folder. When this option is ON, the “Use Destination Folder” is hidden.
- **Use Destination Folder:** When “Use Local Folder” is OFF, “Use Destination Folder” is available. Choose this option to save the Screen Captures in a folder of your choice by providing the folder path.
- **Compress Folder:** Choose this option to compress the Screen Capture file into a zipped folder.
- **Image Format:** Click in the field to select from a drop-down list an image format for the Screen Captures. The choices are PNG, JPG, or BMP formats.

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- **Source Captures:** Choose this option to capture the Source information along with the Canvas and store it in a folder named Sources.
- **Chat Messages:** Choose this option to save the Chat Messages as Text files and store them in a folder named Chat.

### 6.7.4.2 Email SMTP Settings

The Email SMTP Settings tab is used to configure the Canvas Server's ability to send email messages to Canvas users. Typically, email is sent to inform new Canvas users of their account information and to Mobile users to inform them of important information.

Settings

Screen-shot Settings **Email SMTP Settings** Media Server Threshold Settings Chat Settings Call Settings Multicast Settings

SMTP Server Address:	<input type="text" value="localhost"/>
SMTP Server Port:	<input type="text" value="25"/>
Enable SSL:	<input type="checkbox"/> OFF
Use Window Authentication:	<input type="checkbox"/> OFF
	Email Address: <input type="text"/>
	User Name: <input type="text"/>
	Password: <input type="password"/>

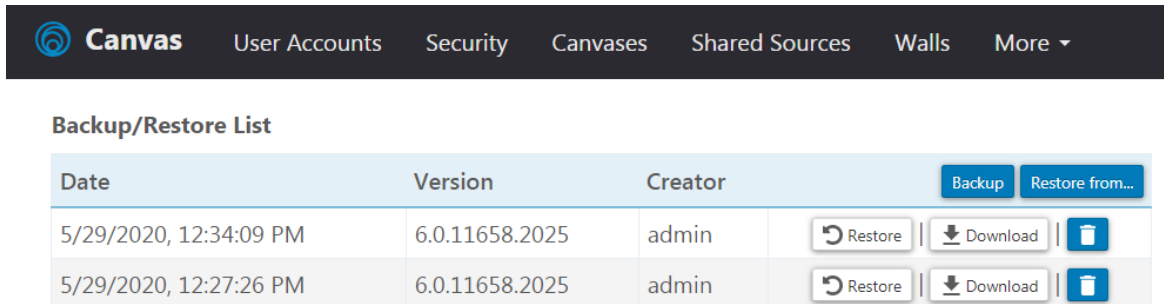
**Figure 6.57 - Email SMTP Settings**

- **SMTP Server Address:** Enter the SMTP Server IP address or leave it as "localhost" if it is the same address as the Canvas Server
- **SMTP Server Port:** 25 is a standard SMTP Server Port, but the administrator can change this value if necessary
- **Enable SSL:** Click the control to ON to enable SSL encryption.
- **Use Window Authentication:** Click the control to ON to enable Window Authentication.
- **Email Address:** The Administrator's email address. Remember – these emails are coming from Canvas.
- **Account Name:** The Administrator's username.
- **Password:** The Administrator's email password.
- Click Save to accept the settings.

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### 6.7.5 Backup/Restore

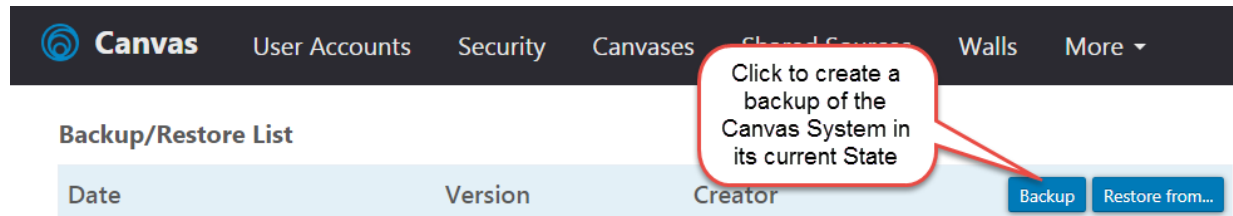
The Backup/Restore tab allows an Admin to create backups of the current state of the Canvas System—the Canvases, Sources, Roles, Settings, Layouts, Jupiter Mobile Servers, and Mobile Devices. The Admin can also designate the file from which to restore the Canvas System.



**Figure 6.58 - Backup/Restore Tab**

#### 6.7.5.1 Creating a Canvas Backup

1. Click the Backup Button.



**Figure 6.59 - Creating a Backup**

2. The backup will be saved in the Administrator's folder on the host system.

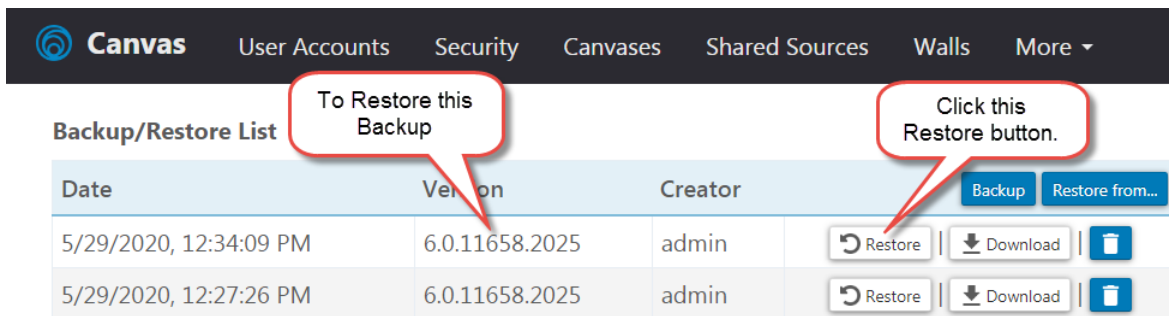
#### 6.7.5.2 Restoring a Canvas Backup

All backup files can be retrieved and restored at any time from the backup folder. There are two ways to choose the Backup file to restore:

- Restoring a recent Backup file from the Backup/Restore List.
- Uploading a saved Backup file from the Backup Folder.

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### 6.7.5.2.1 To restore a recent Backup file from the Backup/Restore List:

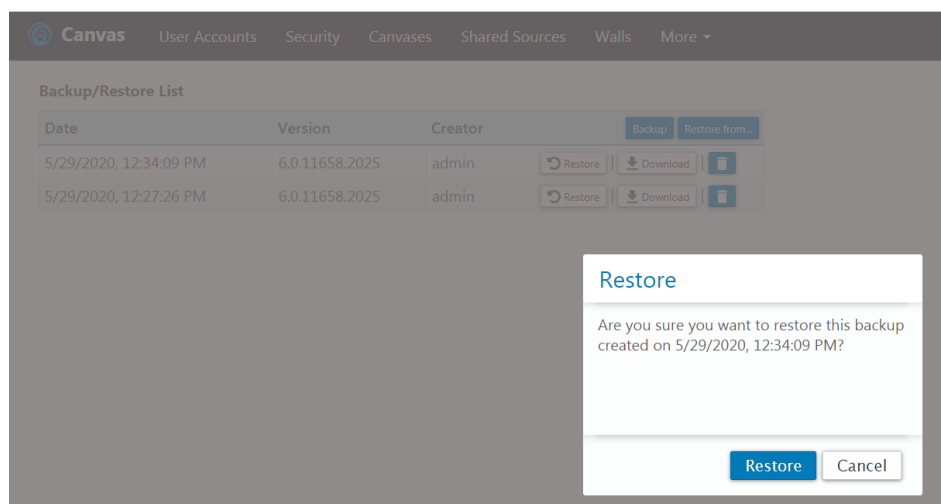


**Figure 6.60 - Restoring Backup from List**

1. Click the Restore button adjacent to the selected backup version:
2. The selected backup version becomes the active Canvas System.

### 6.7.5.2.2 To upload a saved Backup file from the Backup Folder:

1. Click the Restore from button. The following dialog appears:



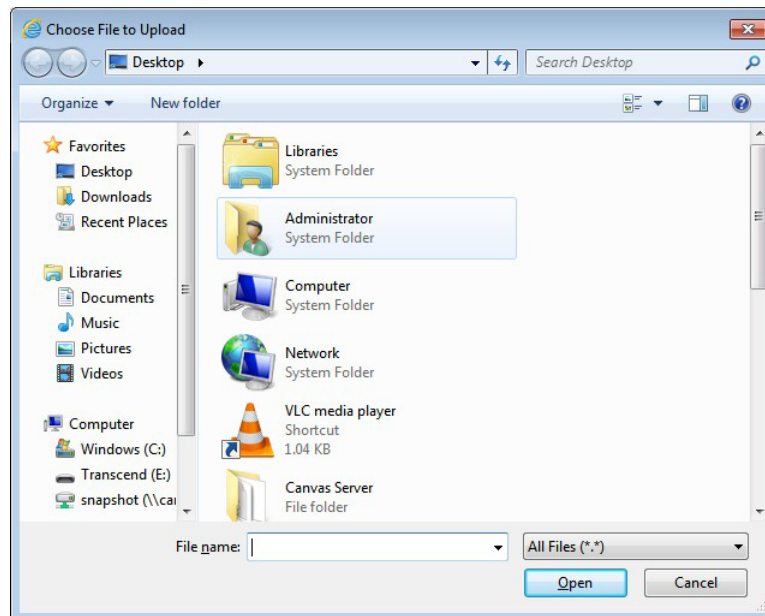
**Figure 6.61 - Upload Backup File**

2. Click the Upload button in the Upload & Restore dialog.
3. Select a backup file to upload from the Choose File to Upload window.



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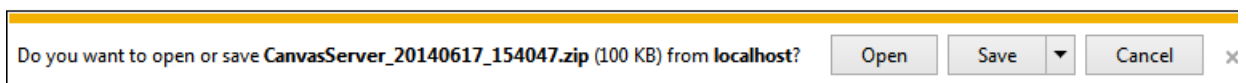
**Figure 6.62 - Choose File to Upload**

4. Click Open. The selected backup version becomes the active Canvas System.

### 6.7.5.3 Downloading a Backup File

A file that has been backed up can either be opened or saved by using the download button on the Backup/Restore List.

1. Click the Download button adjacent to the selected Backup version from the Backup/Restore List. A message similar to the following appears:

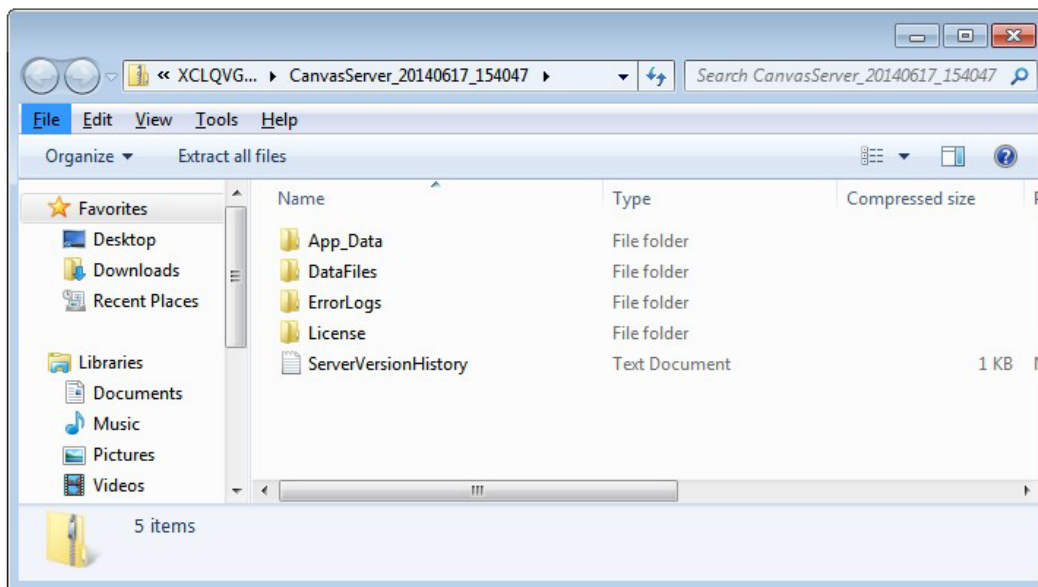


**Figure 6.63 - Download Confirmation Message**

2. When you click Open, the following window with the path to the downloaded Backup file appears.

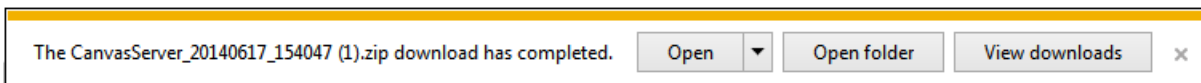
## 6—Administrative Functions

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**Figure 6.64 - Opening Path to Downloaded Backup File**

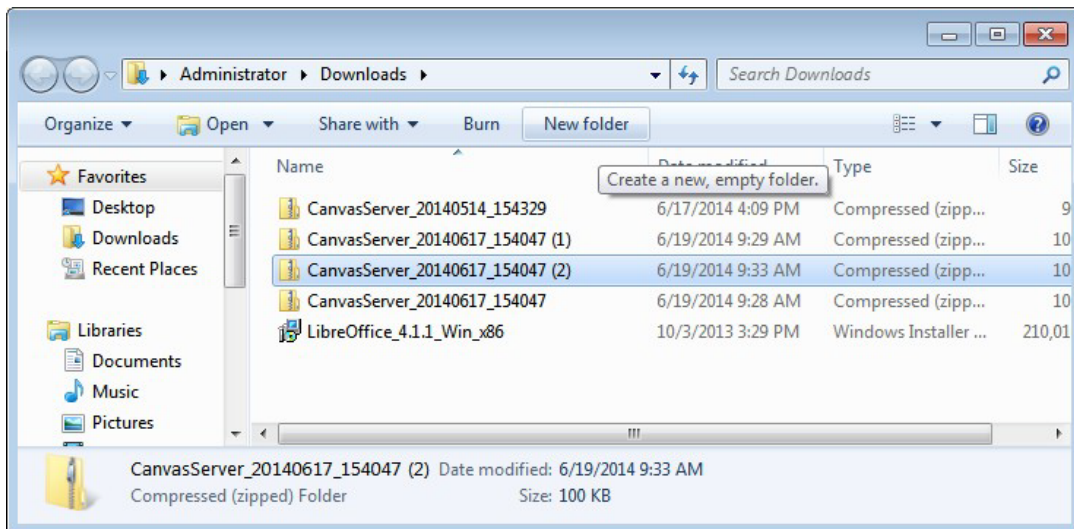
3. When you click Save, the following window appears:



**Figure 6.65 - Saving Download**

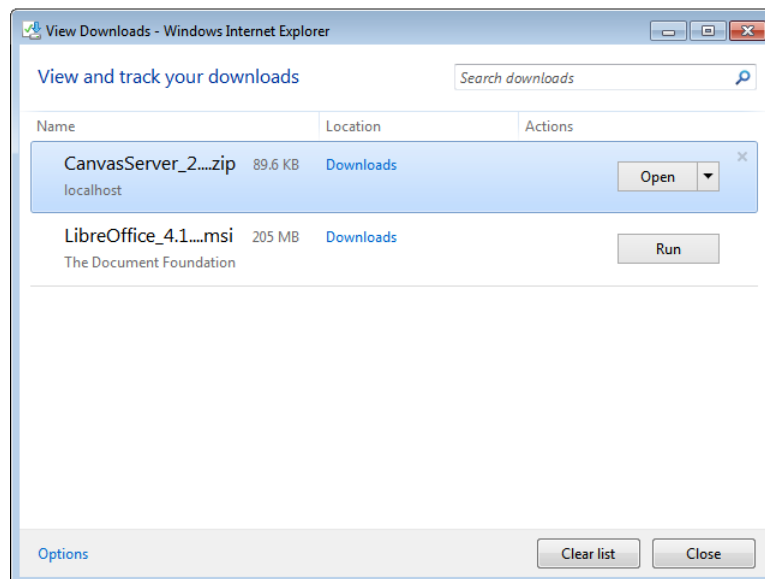
4. When you click Open folder, the Downloads folder path appears:

## 6—Administrative Functions



**Figure 6.66 - Downloads Folder**

- When you click View Downloads, the View Downloads screen appears:



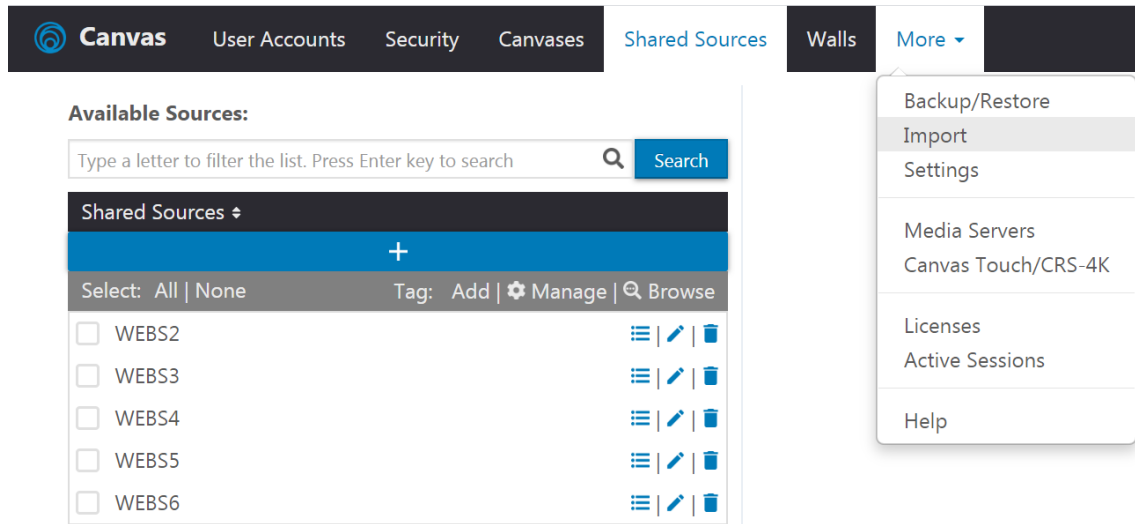
**Figure 6.67 - View Downloads**

## 6—Administrative Functions

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### 6.7.6 Import

1. Click on the More tab and select Import as shown below:



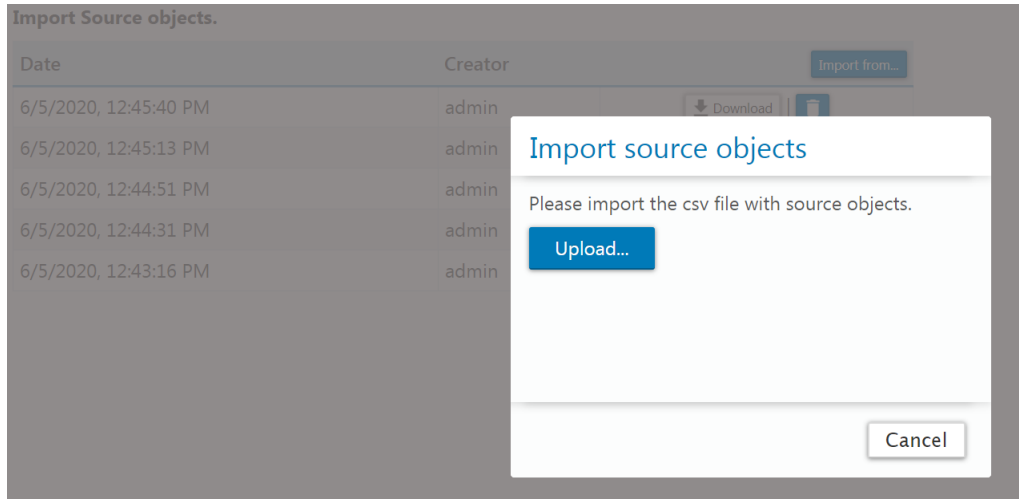
**Figure 6.68 - Canvas Source Object Import tab**

2. The Import Source Objects page will appear. (The list on the left shows previous uploads from ControlPoint systems.)
3. Click on the Import from button in the upper right corner to open Import Source Objects.

In the Import Source Objects dialog box, there may be a list on the left of previous file uploads. These are for informational purposes only. On the right side, you'll see an Upload button.

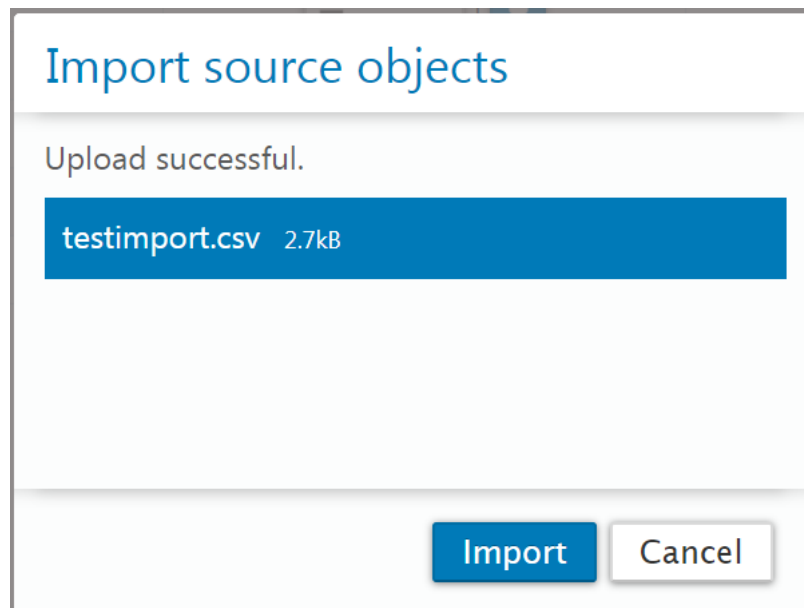
## 6—Administrative Functions

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**Figure 6.69 - Import Source Objects**

- Click the Upload button and browse to the CanvasObject.csv file on the remote storage device. As soon as you select the file, the upload will begin. If there were no prior uploads, the CSV files will be imported as well as uploaded. If there have been prior uploads, the utility will present a red Import button as shown below.



**Figure 6.70 - Import Source Objects**

- Click on the Import button to import the Canvas Source objects. A message will appear indicating that the process is complete. If

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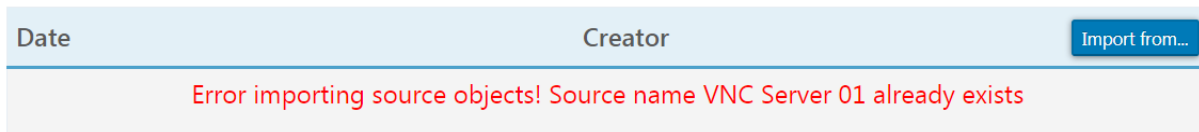
---

there are any errors, the import utility will inform you. Any objects up until the error point will be imported – the others will be ignored. To get the CSV file to add all the sources, you need to fix the errors.

6. In the examples below, there are errors in the fields.

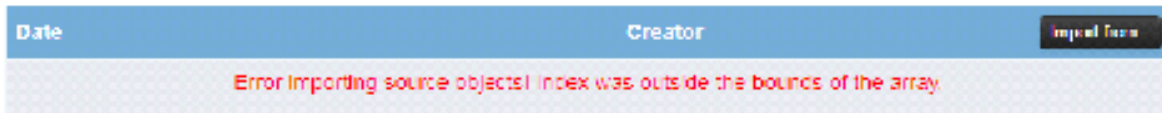
In Example 1, either change the name of the current Canvas source or change the name of the new source in the CanvasObjects.csv file.

### Import Source objects.



In example 2, check the fields for an improper parameter (e.g., misspelled value, value out of bounds, quotes needed to cover spaces in pathname, invalid characters, too many commas, etc.).

### Import Source objects.



7. The Import process creates two backup files:
  - A backup of the sources is created in the Backup/Restore section of the Administration UI. This backup can be used if you wish to restore the previous source database. If these import backups are no longer needed, you can delete them (files can only be deleted one at a time).
  - A backup of the CSV file is created in the Import section of the Administration UI. This file can be retrieved into the local "Downloads" folder using the Download button. If these import backups are no longer needed, you can delete them (files can only be deleted one at a time).
8. After the import finishes, you should verify that all sources were created by comparing the sources to the CanvasObjects.csv file that was used. Mimic local sources can be seen by looking at the details for the Mimic source in the Administration UI (check the "App window objects").
9. Although the mimic local sources may have been created, bring up the Mimic and run the Local Sources to see if they function correctly.

## 6—Administrative Functions

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### 6.8 Administration — Help Tab

The More Help section opens the Canvas Software Manual.



**Jupiter**



## Chapter 7—Canvas Client

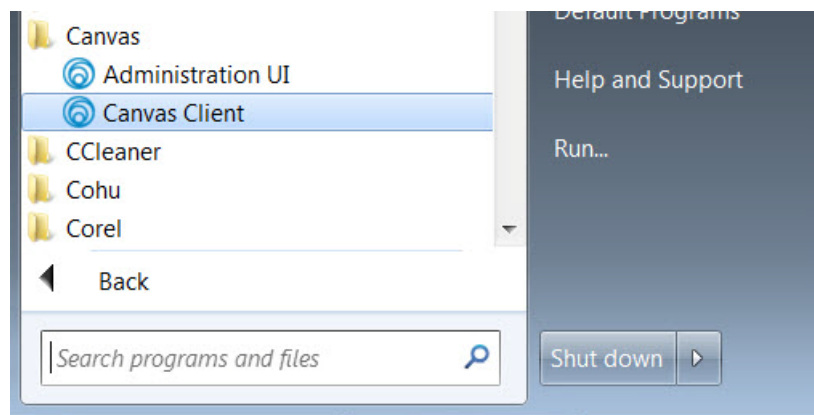
---

### 7. Canvas Client

#### 7.1 Using the Canvas Client

Perform the following to start the Canvas Client:

1. Click the windows **Start** menu.
2. Select and click **Canvas** from the **Program** or shortcut menu.
3. Click **Canvas Client** in the menu.

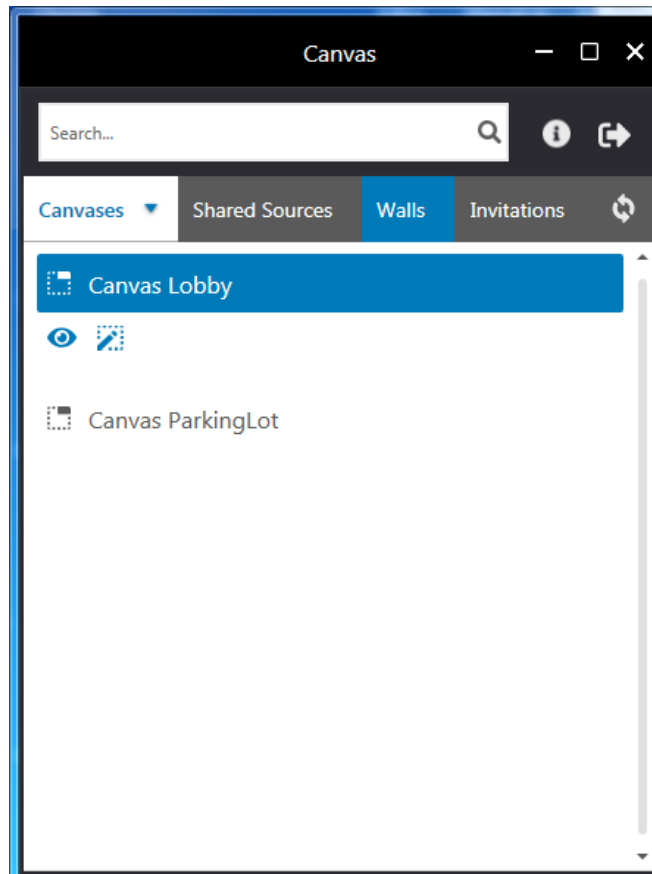


**Figure 7.1 - Start Menu**

## 7—Canvas Client

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4. Upon startup, the Canvas Client will open:



**Figure 7.2 - Canvas Client Application**

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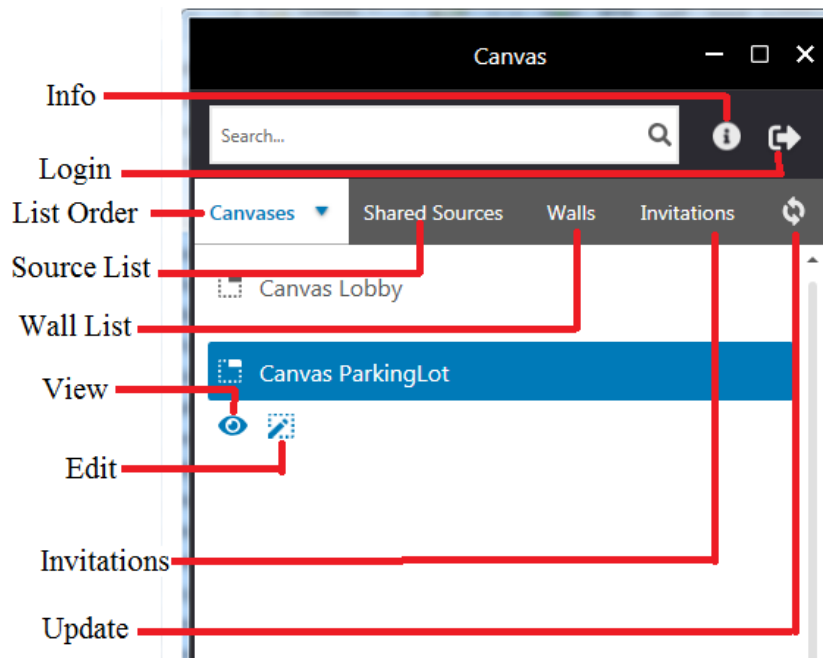
**NOTE:** The Canvas Client will only allow you to open a Canvas for which the Canvas Administrator has given you access privileges.

---

## 7—Canvas Client

### 7.1.1 Canvas Panel Icons

In the **Canvases** tab, selecting a **Canvas** from the list reveals the **View** and **Edit** icons as user options as shown in the figure below:



**Figure 7.3 - Canvas Panel—Canvases Tab Icons**

**Info:** Click this icon to view Client and Server version information.

**Login:** Click this icon to log off and log onto this or another Canvas Server.

**Refresh:** Click this icon to update Canvas Client with any changes made in the Administration UI.

**Walls List Tab:** Click to view the List of Walls

**List Order:** Click to invert the List of Canvases

**Invitations Tab:** Click to view Invitations to view Canvases

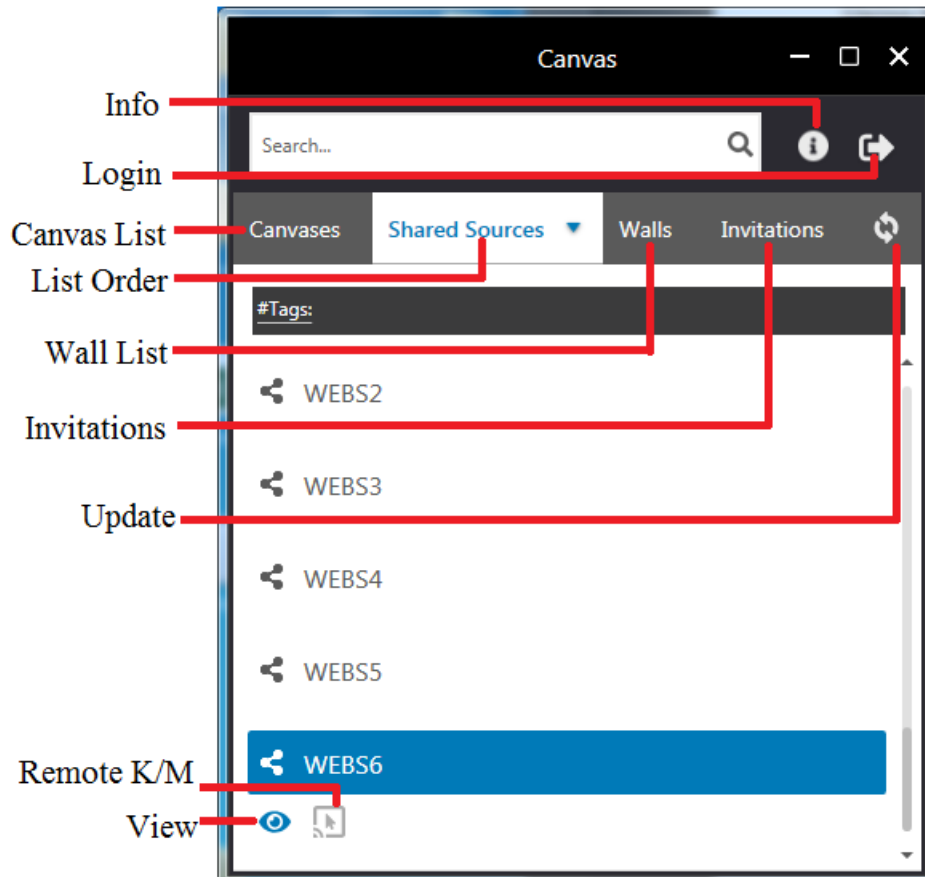
**Shared Sources List Tab:** Click to view the List of Shared Sources

**View:** Click this icon to view the Canvas

**Edit:** Click this icon to view and edit properties to modify the Canvas

## 7—Canvas Client

In the **Sources** tab, selecting a **Source** from the list reveals the View and Remote K/M icons.



**Figure 7.4 - Canvas Panel—Sources Tab Icons**

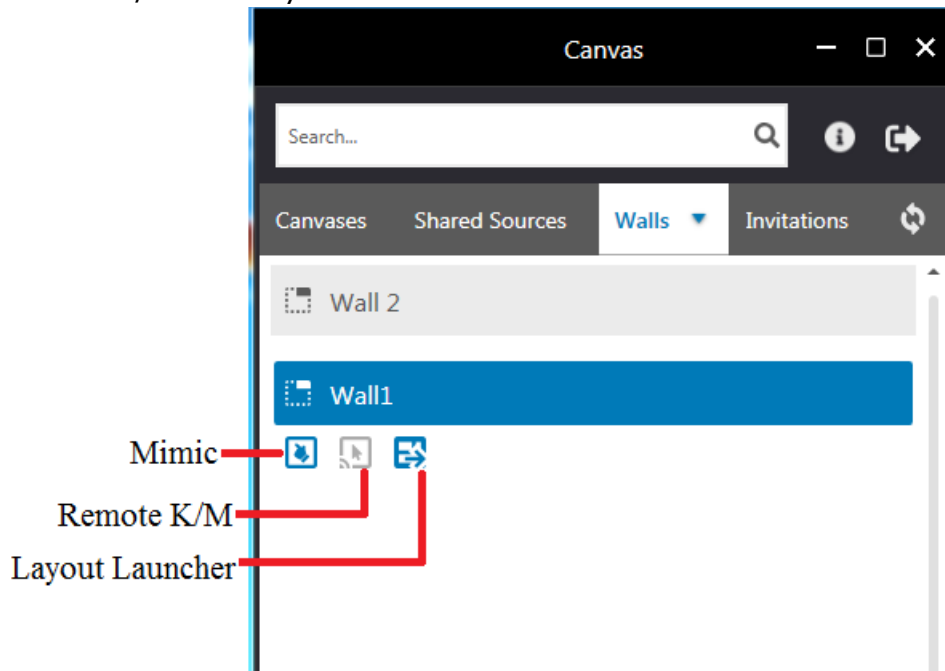
**View:** Click this icon to view the Source (through the **Source Viewer**) as a single window on the desktop.

**Remote K/M:** Click this icon to control the Keyboard and Mouse of a Shared Source remotely to arrange windows and select options.

## 7—Canvas Client

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In the **Walls** tab, selecting a Wall from the list reveals the Mimic, Remote K/M and Layout Launcher icons. See [Section 8 Canvas Mimic](#).



**Figure 7.5 - Canvas Panel—Wall Tab Icons**

**Mimic:** Controls the desktop of another Canvas Client, usually a display wall. Not normally configured for Video or Web Sources.

**Remote K/M:** Click this icon to control the Keyboard and Mouse of a Shared Source remotely to arrange windows and select options.

**Layout Launcher:** Click this icon to launch the layout launcher

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### 7.1.2 Shared Sources Tags

**Sources** can be filtered with the tagging feature in the **Client**. **Tags** are created by the Canvas Admin by adding specific Sources to each **Tag**. See [Section 6.2.6 Tags](#) in the Administration UI chapter.

Tags are visible when the **Shared Sources Tab** is clicked and are inactive when the other tabs are selected.

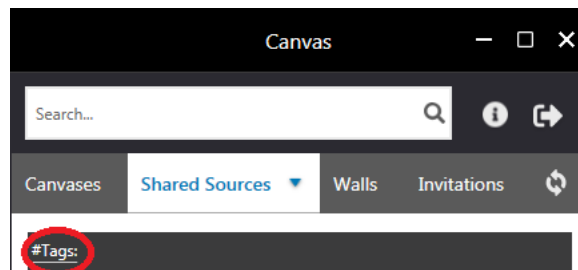


Figure 7.6 - Tags

When you start typing next to the tags, a pop up dialog appears with Tag1, Tag2, etc. as filters.

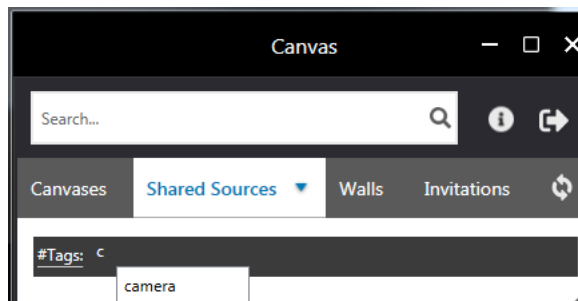
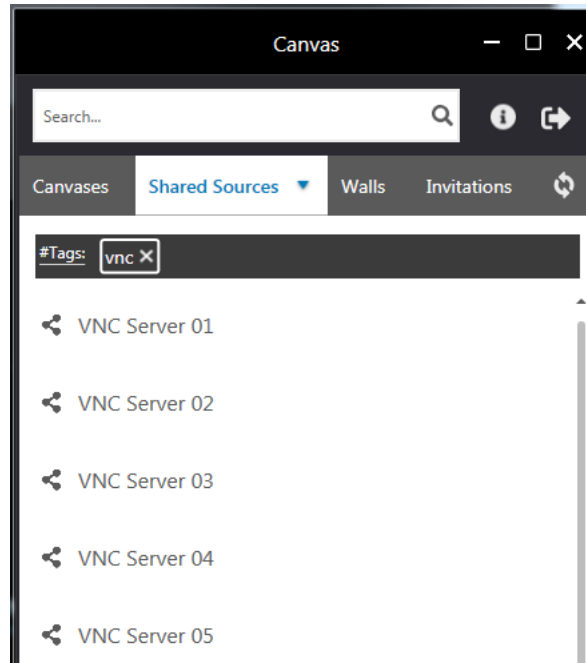


Figure 7.7 - Tags Pop Up


Depending on the tag item chosen, Sources are filtered on the selected Tag criteria. For instance, in the following figure, "vnc" is the filter for the Sources displayed.

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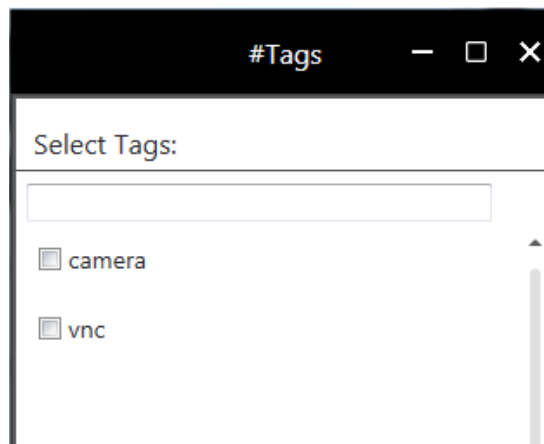
---



**Figure 7.8 - Tagged Sources**

- If you have more than one tag, you will see the  button on the right side of the Tags bar. You can clear all tags from the list by clicking this button.

You can select multiple tags by clicking on the **#Tags** link and check the box next to the tags needed.



**Figure 7.9 - Tags Window**

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---

### 7.2 Adding Shared Sources

#### 7.2.1 Adding Shared Sources to a Desktop

To view a **Source** as a single window on the desktop, select the **View icon** for that **Source** from the **Source Panel** as explained in [Section 7.1.1 Canvas Panel Icons](#).

---

NOTE: Depending on the type of **Shared Source**, Right-clicking in the **View** window of an opened **Shared Source** may open a drop down menu with choices relevant to the type of **Shared Source** that has been opened, such as:

- **Activate Remote Cursor** - see [Section 8.10 Remote Cursor](#)
  - **Screenshot** - Capture file specified in [Chapter 6. Administrative Functions](#)
  - **Preserve Aspect Ratio** - uncheck the box to fill the window
  - **Mute/UnMute Audio** - shows only when a audio channel is present
- 

#### 7.2.2 Adding Shared Sources to a Canvas

**Shared Sources** are added to **Canvases** in the client's **Canvas View** dialog. To open it:

1. Open the Canvas Client as described in [Section 7.1 Using the Canvas Client](#).
2. Click on the Canvases tab on the left near the top.
3. Select a Canvas and click on the white rectangular **Edit** icon described in [Section 7.1.1 Canvas Panel Icons](#). The **Edit** mode screen will open for Canvas Users who have permission (authorized by the Administrator using the **Administration UI**).
4. A new Canvas window will open directly into the **Edit** mode. Access **Edit** while in the canvas **View** mode by clicking on the **Edit** button in the upper left corner of the screen.
5. Canvas windows may be created by dragging objects from the upper left **Widget Library** panel onto the Canvas. **Catalyst Clients** will also show a **Source Viewer** in the **Widgets Library**.
6. Canvas windows are deleted by right clicking the window and selecting **Remove**.



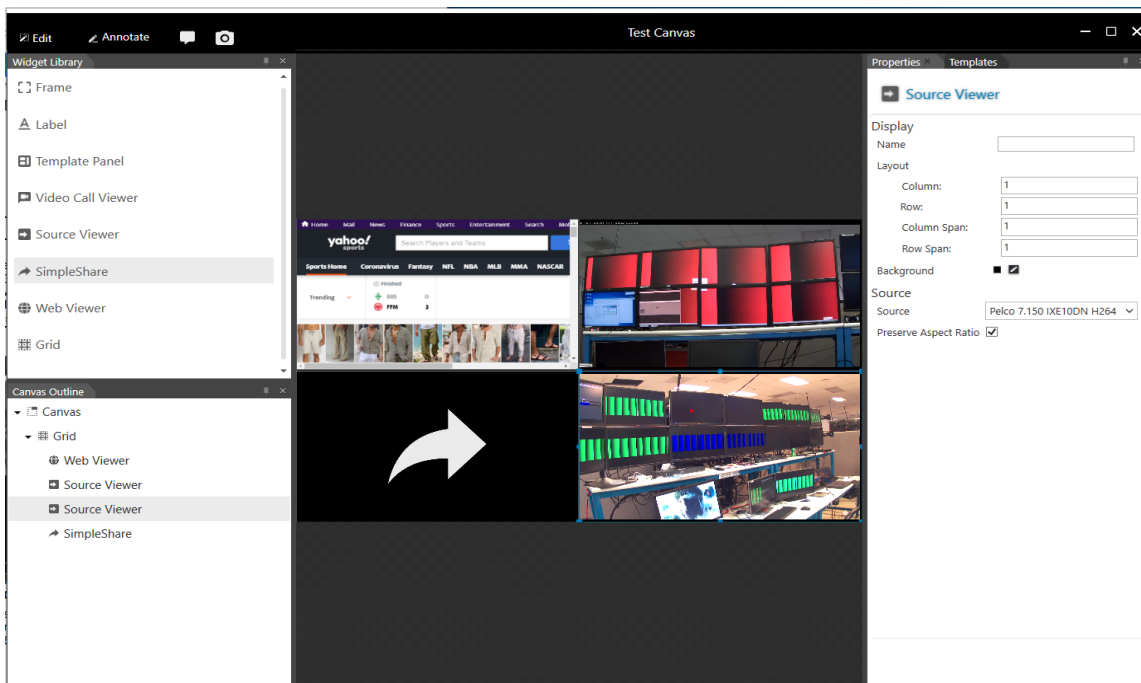
## 7—Canvas Client

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NOTE: Right-clicking a Source window in **Canvas View** opens a drop down menu:

- **View** - Opens a separate **View** window for that **Source**
- **Control** - see [Section 8.10 Remote Cursor](#)
- **Mimic** - opens a Mimic window associated with that Canvas Client
- **Screenshot** - Capture file specified in [Chapter 6. Administrative Functions](#).
- **Mute/UnMute Audio** - shows only when a audio channel is present

---



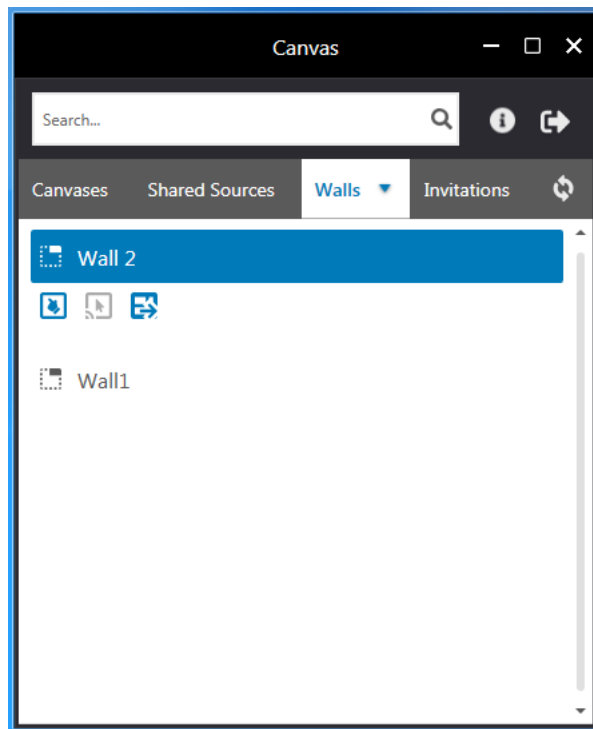
**Figure 7.10 - Canvas View Edit Mode**

The **Canvas View Edit** screen has **Edit**, **Annotate** and **Chat** modes that are selected in the upper left corner of the screen. These functionalities are described in Sections [7.4](#), [7.5](#), and [7.6](#).

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### 7.3 Viewing Walls

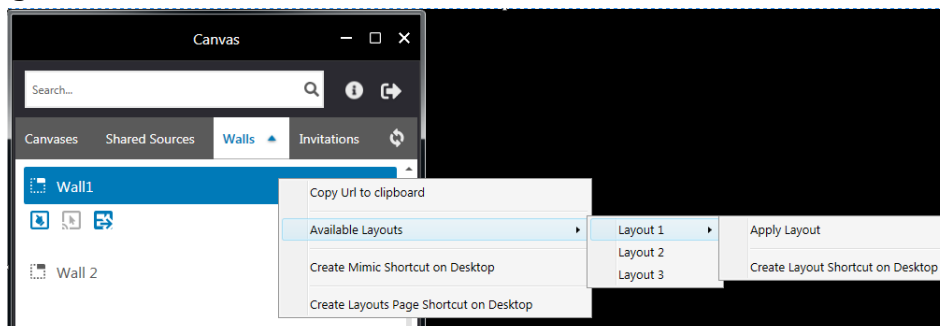
A list of Walls configured from the Administration UI can be accessed by clicking on the Walls Tab from the Canvas Client.



**Figure 7.11 - Canvas Client Wall List**

Walls are created in the Administration UI. See [Section 6.5 Administration—Walls Tab](#). Chapter 8 on the Canvas Mimic describes how to create Walls and Layouts.

[Section 7.12 Right Click Wall Menu](#) displays the Right Click menu when right-click on the Wall item.



**Figure 7.12 - Right Click Wall Menu**

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### 7.4 Edit Mode Functions

The left panel of the Canvas dialog in Edit Mode displays the **Widget Library** icons, which are discussed in the following sections:

- [Section 7.4.1 Grid](#)
- [Section 7.4.2 Source Viewer](#)
- [Section 7.4.3 Web Viewer](#)
- [Section 7.4.4 Canvas SimpleShare Viewer](#)
- [Section 7.4.5 Label](#)
- [Section 7.4.6 Frame](#)
- [Section 7.4.7 Templates Panel](#)

Start at [Section 7.4.1 Grid](#) and proceed through the sections in order to configure Sources and Canvases.

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### 7.4.1 Grid

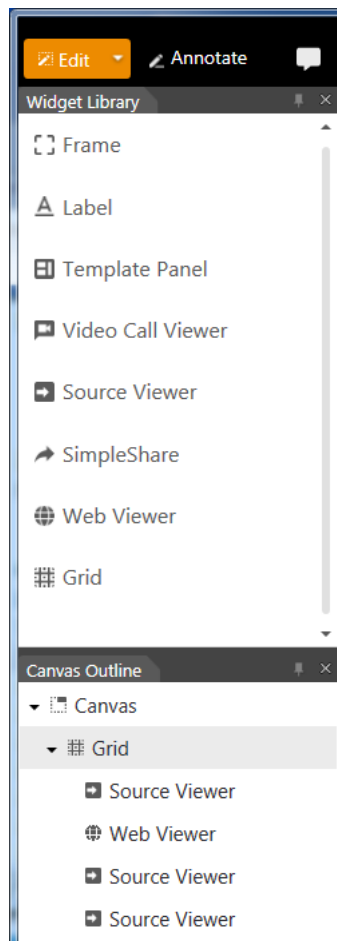
The **Grid** widget provides the grid matrix for the displays on the canvas based on the number of rows and columns defined on the *Grid Properties Tab* panel.

---

**NOTE:** If a Source is added to the Canvas without a grid in place, the Source will occupy the **entire** Canvas display area.

---

1. To add a grid to a canvas, click and drag the **Grid** icon under **Widget Library** to the canvas area and adjust the size and location of the blue rectangle.

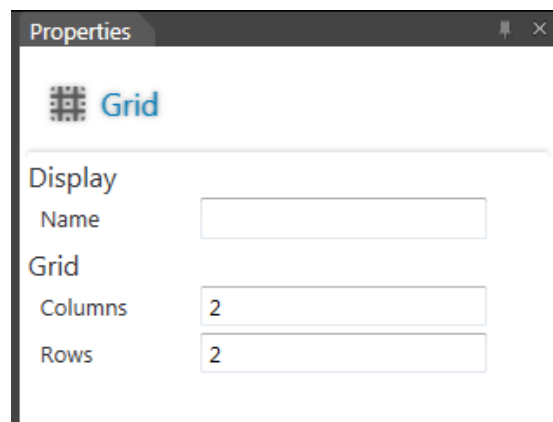


**Figure 7.13 - Grid Widget**

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- To view the **Grid Properties**, click on the **Grid** icon under **Canvas Outlines** at the bottom left. The **Properties** tab below will appear on the right side of the **Canvas View** dialog.



**Figure 7.14 - Grid Properties Tab**

- Subsequent widgets (Source, Frame, Label, or another Grid) can be added to the first Grid. Individual Grids can be added to designate the exact location of the widget within a previous grid.

**Table 7. 1: Grid Properties**

Attribute	Definition
<b>Display</b>	
Name	Name the Grid
<b>Grid</b>	
Rows	Designate the number of rows for the Grid
Columns	Designate the number of columns for the Grid

## 7—Canvas Client

---

### 7.4.2 Source Viewer

The **Source Viewer** icon in the **Widget Library** can be dragged and dropped onto the canvas to create a new window. The source is then defined the Properties tab on the right. The types of **Sources** available are:

- VNC (RFB) - virtual network computer clientstreaming Video - UDP, TCP or HTTP IP stream
- Mobile Upstream - HTTP Live Stream (HLS)
- Direct Input - Catalyst only
- To open Web Windows, see [Section 7.4.3 Web Viewer](#).

All associated properties of the source will be highlighted on the *Properties tab* panel for the source.

---

NOTE: Canvas supports sources when the server is either disconnected or unavailable. This support allows sources to continue being viewed or up streamed without depending on the Canvas Server.

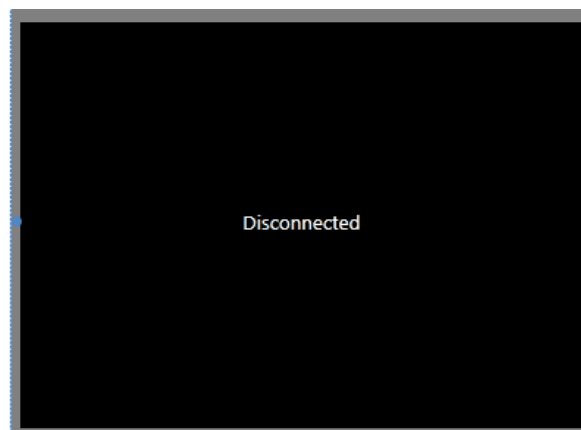
---

#### 7.4.2.1 Adding Sources to a Client Desktop

To view a **Source** as a single window on the desktop, select the **View** icon from the **Source Panel** as explained in [Section 7.1.1 Canvas Panel Icons](#), Canvas Panel Icons.

#### 7.4.2.2 Adding Sources to a Canvas

1. Drag the Source Viewer icon to a desired spot on the canvas. The corresponding window will be replaced by a black window, displaying the text **Disconnected**



**Figure 7.15 - Disconnected window**

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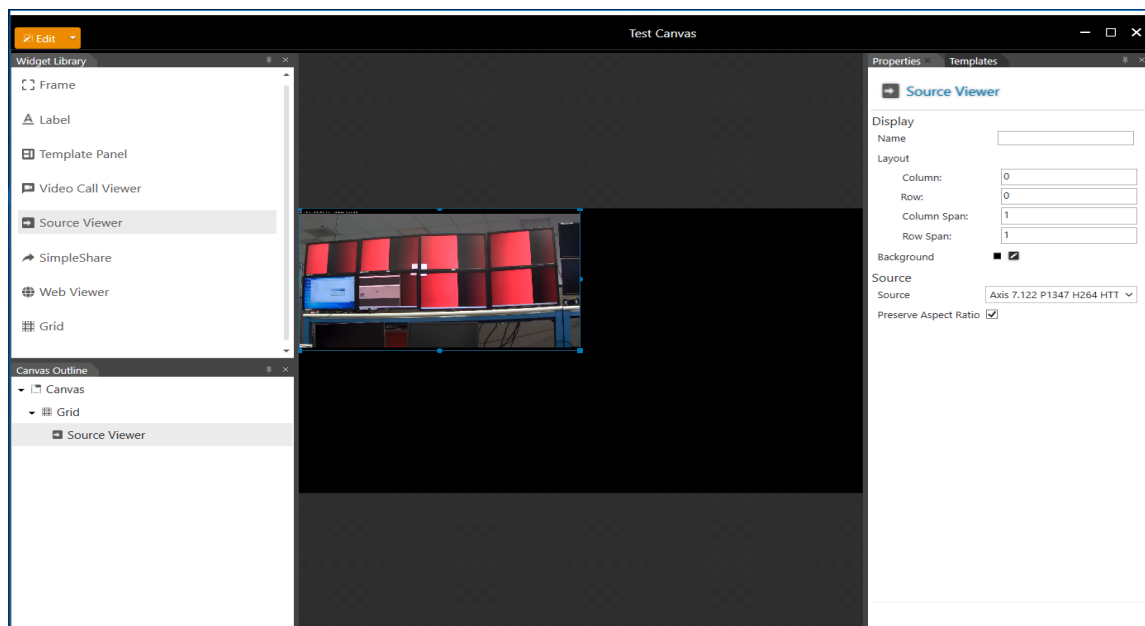
---

2. In the **Source Viewer Properties** panel, choose the source to be displayed from a drop-down menu. The black window showing **Disconnected** disappears and the selected streaming source will be active on the Source Viewer display on the Canvas.

---

NOTE: Only Sources that have been set up with the proper permissions by the Administrator will appear on the **Source** drop down menu.

---



**Figure 7.16 - Source Viewer on Canvas**

3. Adjust any of the properties related to the source on the **Properties** panel.
4. The properties of the **Source Viewer** will be displayed in the **Properties** tab on the right side of the **Canvas** dialog (default location that can be changed to anywhere on the canvas).

**Direct Input Sources** are viewable only on Catalyst Wall processors. A source connected directly to a Catalyst Direct Input does not rely on a network to be viewed locally. Remote viewers of the Direct Input source see only a black window. For a local source to be shared, the source must be routed through an encoder, then to the Catalyst Direct Input. See [Section 6.2.3 Multiple Source Types for One Shared Source](#) for an example.

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**NOTE:** Catalyst Direct Inputs support video only. Audio must be extracted from sources or HDMI, DP, and SDI signals and processed separately.

---

**Table 7. 2: Source Viewer Properties**

Attribute	Definition
<b>Display</b>	
Background	The first square icon shows the chosen color for background. The second square icon contains the color swatch from which a background color can be chosen.
Name	Name the Source Viewer
Layout	
Column	Designate the column placement for the Source Viewer
Row	Designate the row placement for the Source Viewer
Column Span	Designate the area the Source Viewer will span in the column
Row Span	Designate the area the Source Viewer will span in the row
<b>Source</b>	
Source	Drop-down menu where available Sources are listed
Keep aspect ratio	When this option is selected, the original aspect ratio of the source will be maintained.



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### 7.4.3 Web Viewer

The **Web Viewer** widget allows the user to add a web viewer (web URL) to the Canvas. Users can interact (click buttons, fill forms, etc) with web viewer or web source window while in the **Edit** mode. Users can annotate on top of either window when in **View** mode.

To add a Web Viewer:

1. Drag a **Web Viewer** from the Widget library (left panel) and drop on the Canvas (middle pane)
2. Type a URL in the **Overwrite Source URL** input field (right panel) and press the **Enter** key.
3. If the website you want to view was set up by the System Administrator, it will show in the Canvas on the designated window.

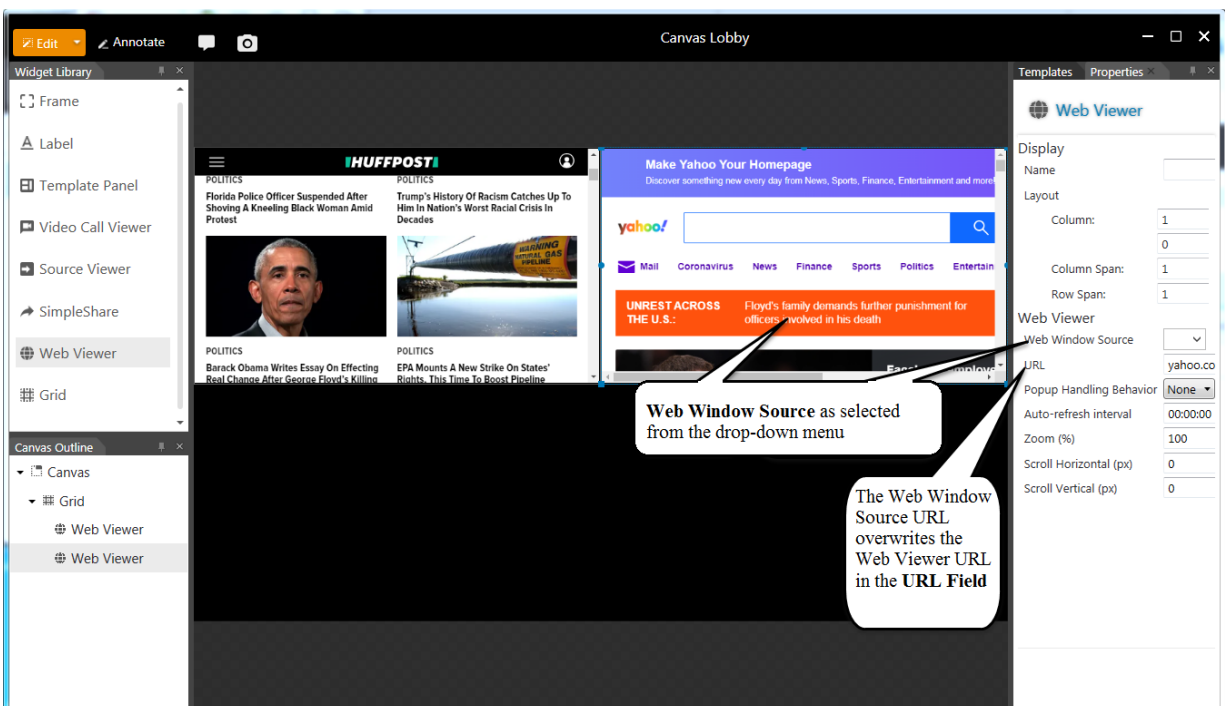
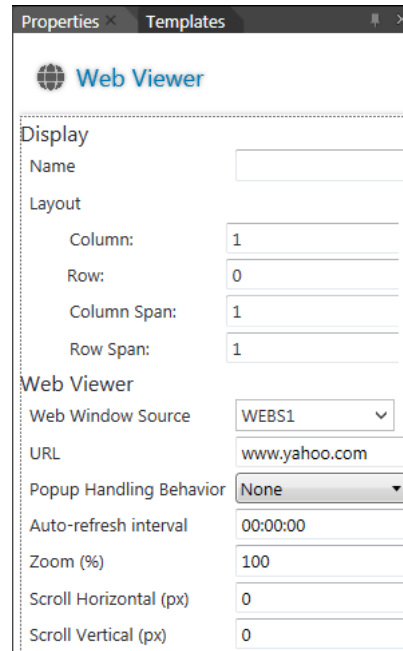


Figure 7.17 - Web Window Source

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**Figure 7.18 - Web Viewer Properties**

**Table 7.3: Web Viewer Properties**

Attribute	Definition
<b>Display</b>	
Name	Name the Web Viewer
Layout	
Column	Designate the column placement for the Web Viewer
Row	Designate the row placement for the Web Viewer
Column Span	Designate the area the Web Viewer will span in the column
Row Span	Designate the area the Web Viewer will span in the row
<b>Web Viewer</b>	
Web Window Source	Drop-down menu of Web Sources created by the Canvas Administrator
Overwrite Source URL	The URL for the Web Viewer website or for the Web Source selected from the Web Window Source drop-down menu

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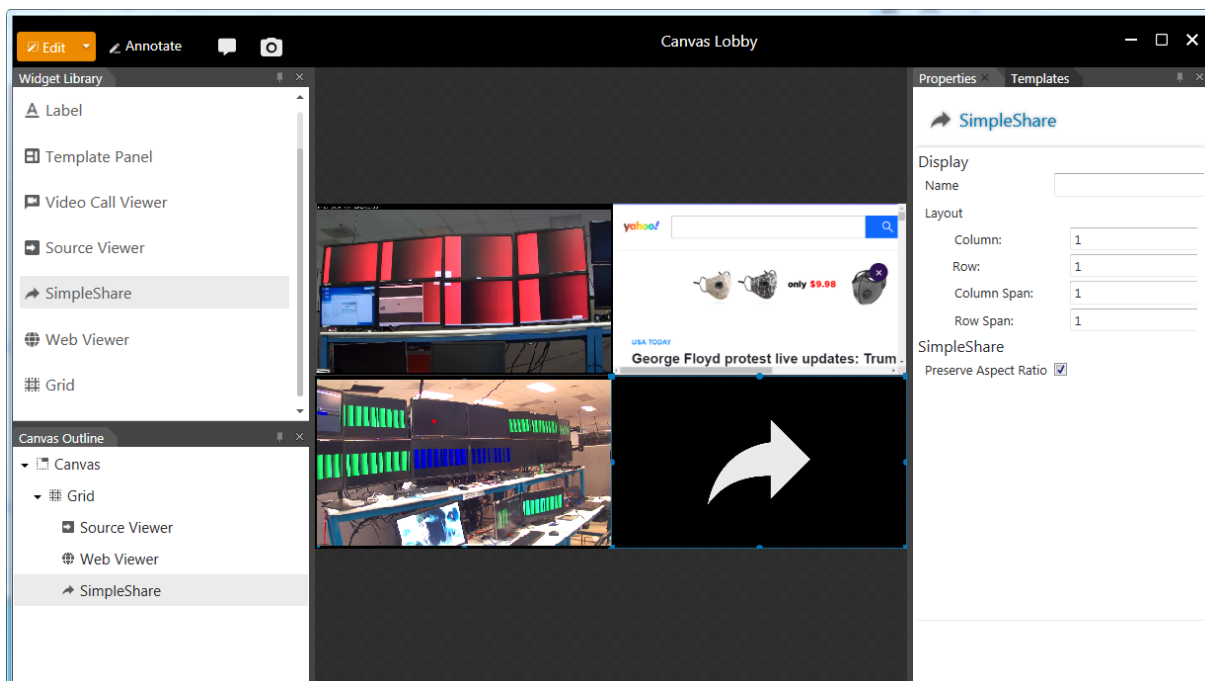
### 7.4.4 Canvas SimpleShare Viewer

**Canvas SimpleShare** sources must be set up on a display wall before they can be used in a canvas. Once a PC desktop or application is set up to be viewed in a canvas on the local display wall using the **Canvas SimpleShare** web interface, it may be viewed on that canvas at other sites.

The **SimpleShare** widget in the canvas editor allows the Canvas creator to create a space in a canvas for a share window that can be seen by any **Canvas Client** viewing that canvas. A **SimpleShare** source may be viewed remotely only in a Canvas that includes the **SimpleShare** window.

#### 7.4.4.1 To add a Canvas SimpleShare:

1. In the Canvas Client on **Edit** mode, drag a **SimpleShare** from the Widget library (left panel) and drop it on the Canvas (middle pane).
2. If a Simple Share is set up for that Canvas, it will open in the window.



**Figure 7.19 - Simple Share Window**

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### 7.4.5 Label

The **Label** widget can be used to add text to label a display. To assign a label, drag and drop it on one of the display slots as shown below. The example uses a 4x8 grid to reduce the size of the label.

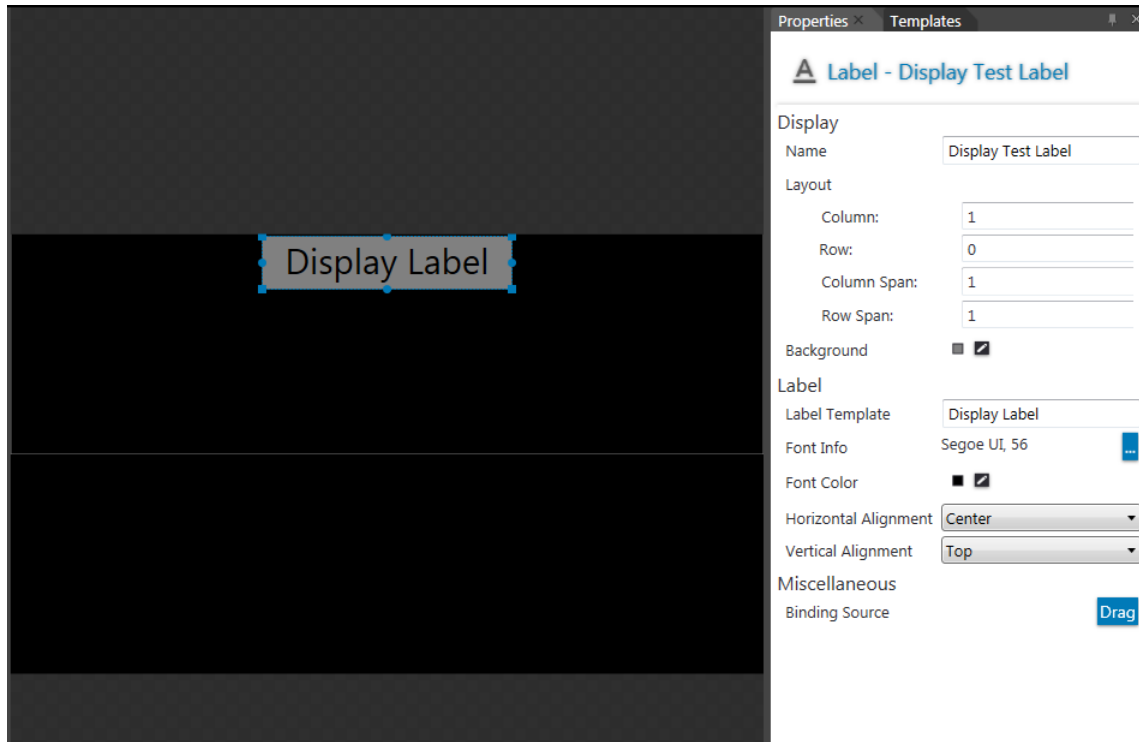
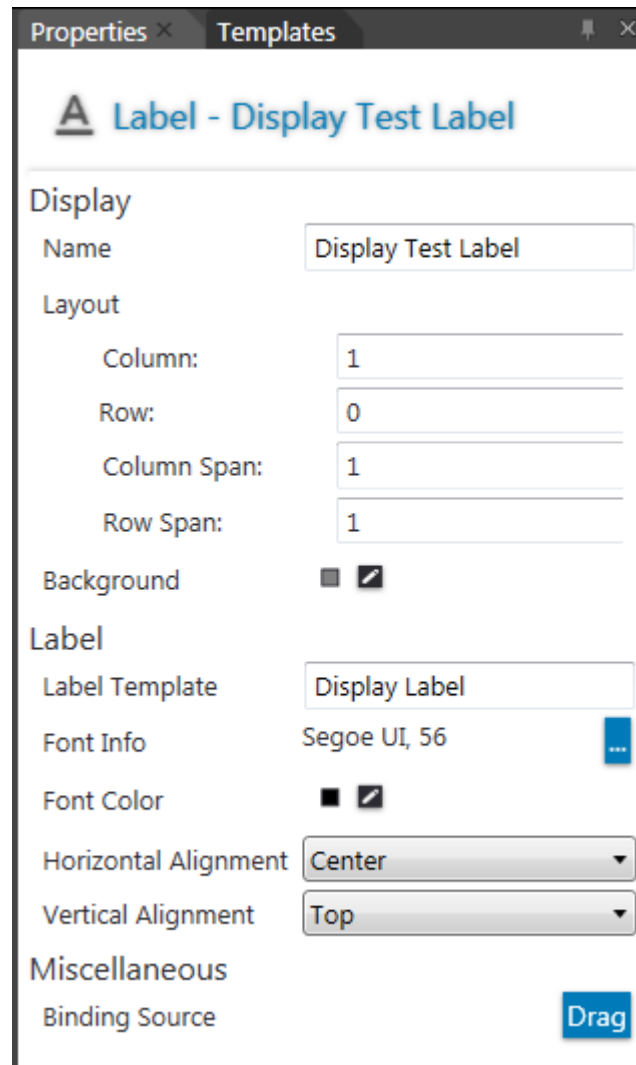


Figure 7.20 - Label Widget

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The properties of the Label will be displayed in the **Properties** tab on the right side of the Canvas dialog.



**Figure 7.21 - Label Properties Tab**

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### 7.4.5.1 Creating Dynamic Labels

1. Enter **{Binding Source.Name}** in the **Label Template** field.
2. Drag a Source into the Frame.
3. Drag the **Drag** button under Miscellaneous on the bottom right to the Viewer under the Frame in the Canvas Outline on the left. The Title will change when a different source is selected for that window in Source Properties.

**Table 7. 4: Label Properties**

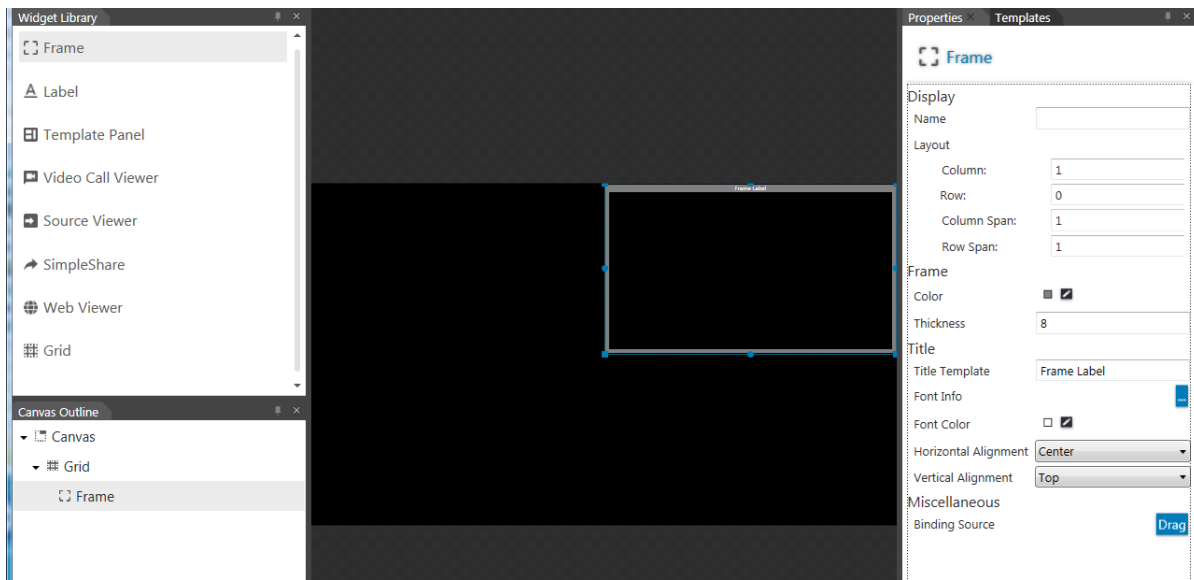
Attribute	Definition
<b>Display</b>	
Background	Pick a background color for the label from the color swatch
Name	Name the label
Layout	
Column	Designate the column placement for the label
Row	Designate the row placement for the label
Column Span	Designate the area the label will span in the column
Row Span	Designate the area the label will span in the row
<b>Font</b>	
Font Info	Designate the font used by the label
Font Color	Designate the font color for the label from the color swatch
<b>Label</b>	
Label Template	Enter the label content
Horizontal Alignment	Enter left, center, or right for the horizontal alignment
Vertical Alignment	Enter top, center, or bottom for the vertical alignment
<b>Miscellaneous</b>	
Binding Source	Used to bind the label to another source so that any information about that source is displayed dynamically rather than the usual display of static text.

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### 7.4.6 Frame

The **Frame** widget can be used to add a border outline and a title to the display. Frames can help distinguish one or more display slots in a Grid. To assign a Frame, drag and drop it on one of the display areas as shown below:

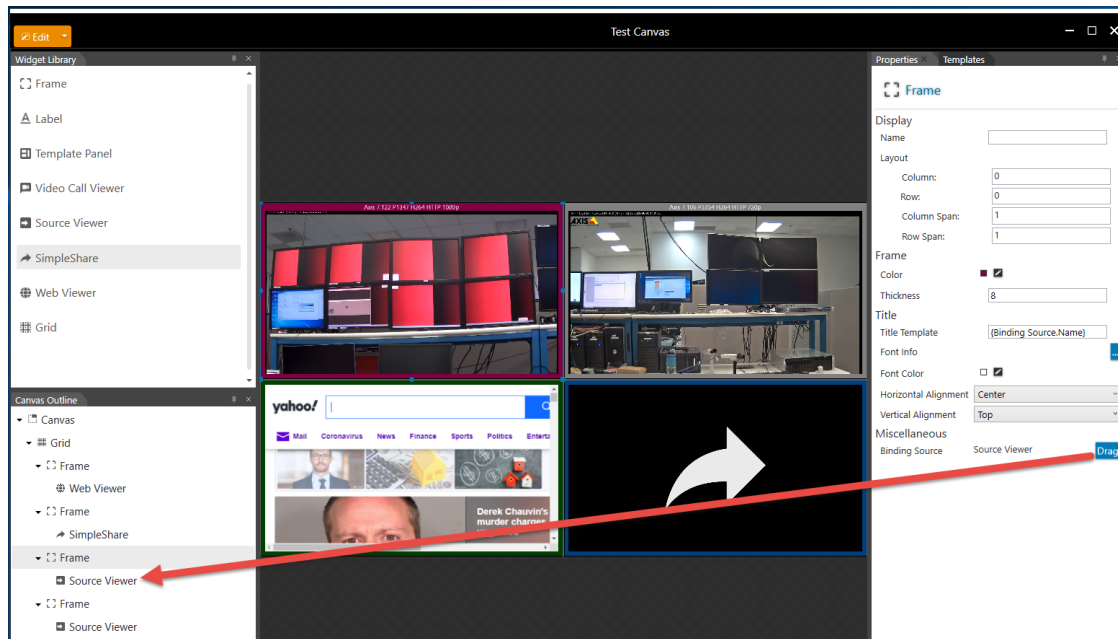


**Figure 7.22 - Frame Widget**

The properties of the Frame will be displayed in the **Properties** tab on the right side of the Canvas dialog.

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### 7.4.6.1 Creating Dynamic Frame Titles



**Figure 7.23 - Dynamic Frame Titles**

1. Enter one of the Command Strings below in the **Title Template** field:  
**{Binding Source.Name}** displays the name of the **Source** in the **Viewer**  
**{DateTime <format>}** shows specified data, e.g., MMM dd, yyyy hh:mm:ss
2. **DateTime** appears immediately on the frame. Drag a Source into the Frame.
3. For **Binding Source**, drag the **Drag** button under Miscellaneous on the bottom right to the Viewer under the Frame in the Canvas Outline on the left. The Title will change when a different source is selected for that window in Source Properties.

**Table 7. 5: Frame Properties**

Attribute	Definition
<b>Display</b>	
Name	Name the frame
Layout	
Column	Designate the column placement for the frame
Row	Designate the row placement for the frame
Column Span	Designate the area the frame will span in the column
Row Span	Designate the area the frame will span in the row



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**Table 7. 5: Frame Properties**

Attribute	Definition
<b>Frame</b>	
Color	Pick the frame color from the color swatch
Thickness	Designate the frame thickness with a number
<b>Title</b>	
Font Color	Designate the font color from the color swatch
Title Template	Enter the Title text or Command String (see above)
Horizontal Alignment	Enter left, center, or right for the horizontal alignment
Vertical Alignment	Enter top, center, or bottom for the vertical alignment
Font Info	Designate the font used by the frame
<b>Miscellaneous</b>	
Binding Source	Used to bind the frame to another source so that any information about that source is displayed dynamically rather than the usual display of static text.

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### 7.4.7 Templates Panel

The **Templates Panel** tab is to the right of the **Properties Panel** tab on the right of the **Canvas Interface**. The **Templates Panel** allows a Client user to save the current Canvas as a Canvas Template.

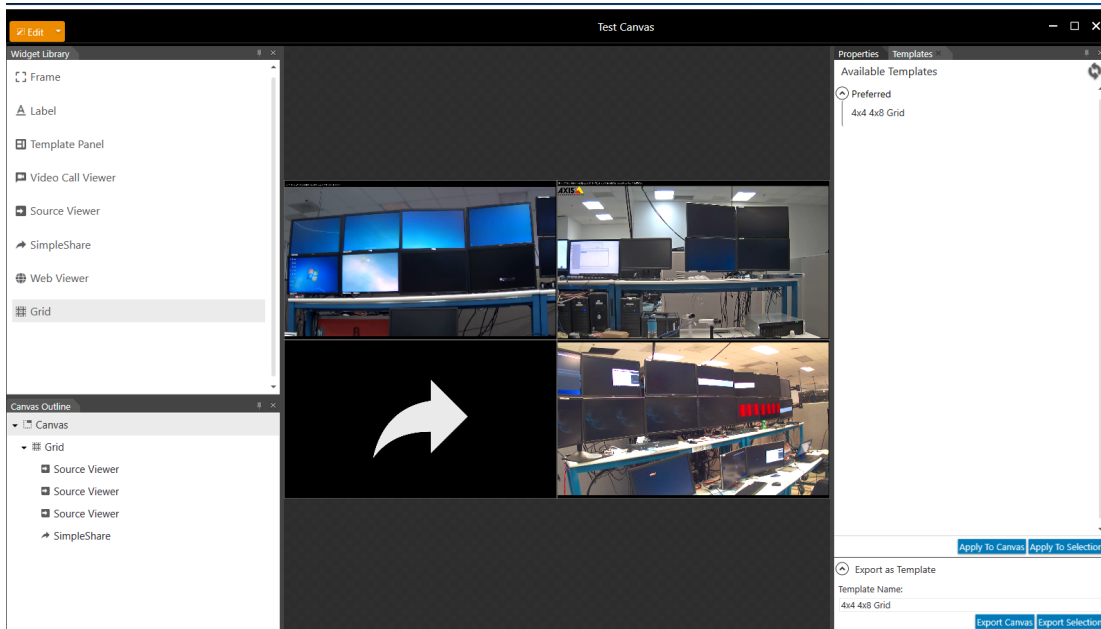


Figure 7.24 - Template Panel

#### 7.4.7.1 Saving a Canvas as a Template

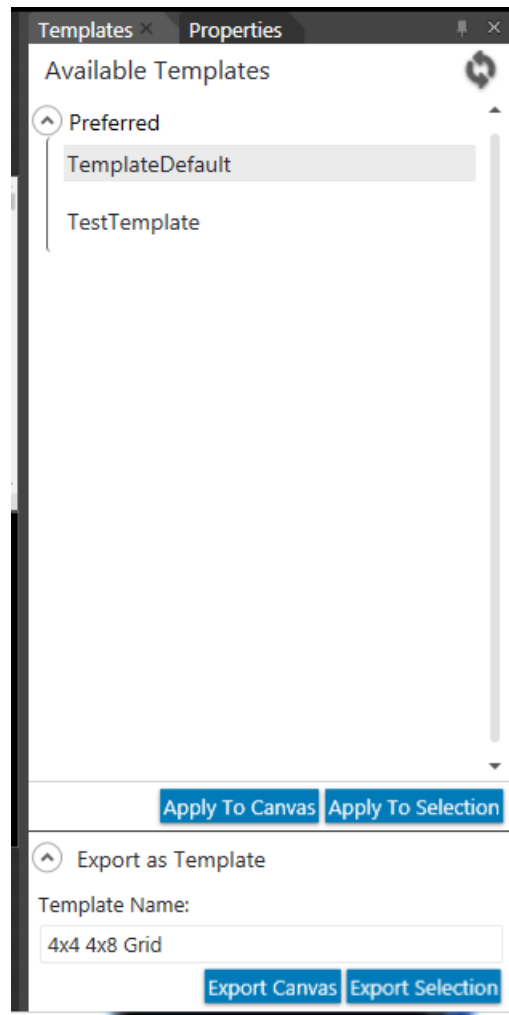
To save the active canvas as a template perform the following:

1. Click the **Templates Tab** at the right bottom of the **Properties Panel**.
2. Expand the **Export as Template** section.

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3. Enter a name in the **Template Name** field and click on **Export Canvas** to save. This Template can be recalled later to apply it to another Canvas.

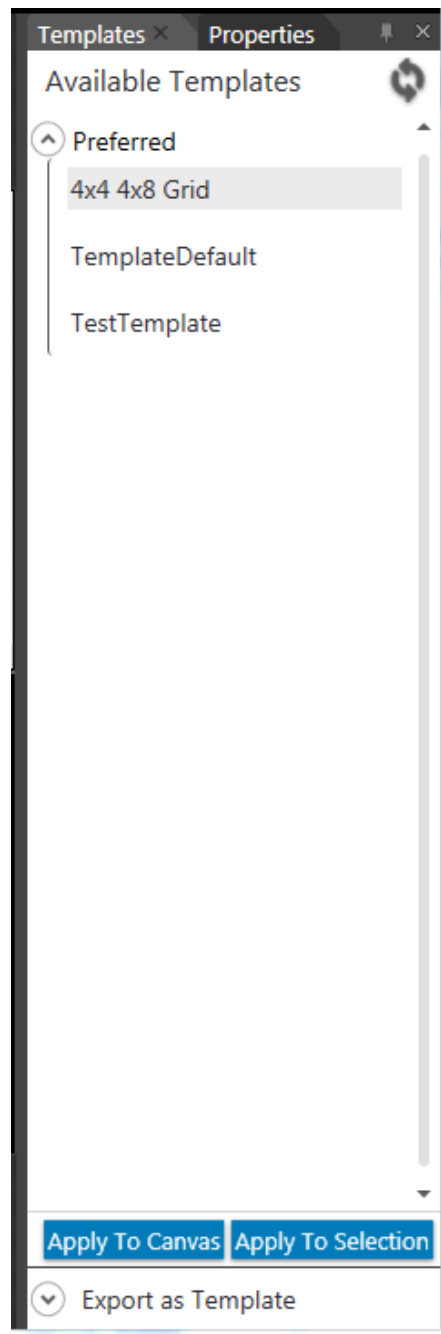


**Figure 7.25 - Export as Template**

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4. The saved Template appears in the **Available Templates** list under the **Templates Panel** and also in the **Administration UI** (**Administration UI**—>**Canvases**—>**Templates Tab** —>**Available Canvas Templates** list.).



**Figure 7.26 - Available Templates List**

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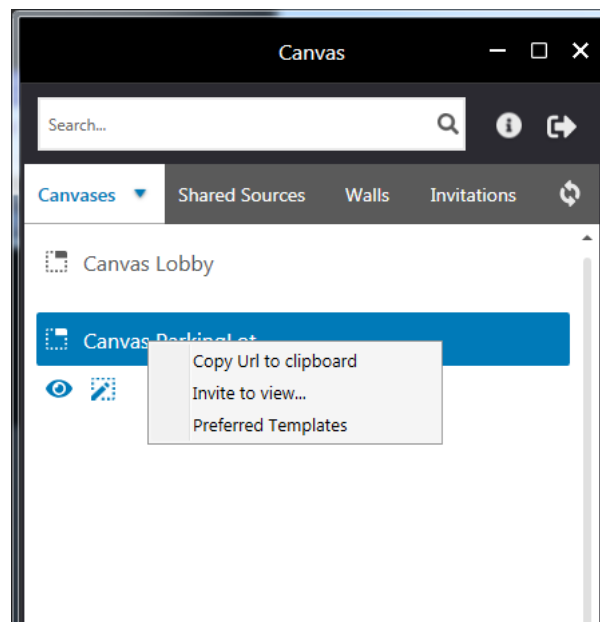
---

5. In the Templates Tab:
  - Preferred template objects are on the top of the list, followed by a separator and a list of non-preferred templates.
  - The bottom of the panel has two buttons **Apply To Canvas** and **Apply To Selection**.
  - **Apply To Canvas** applies the selected template object at the root of the Canvas, replacing the Canvas content with the template content.
  - **Apply To Selection** replaces the content of the currently selected Canvas element (such as Frame or Container widgets).
  - Dragging and Dropping the template object on the Canvas workspace applies the template.
  - The **Save as Template** button on the panel initiates the operation of saving the current Canvas design as a template object.

### 7.4.7.2 Applying Templates from Right-Click Menu

All the saved **Preferred Templates** can be accessed from the Canvas Panel, using the right-click menu.

1. From the **Canvases** panel in the **Canvas** dialog, right-click on a Canvas to which you want to apply the Preferred template.

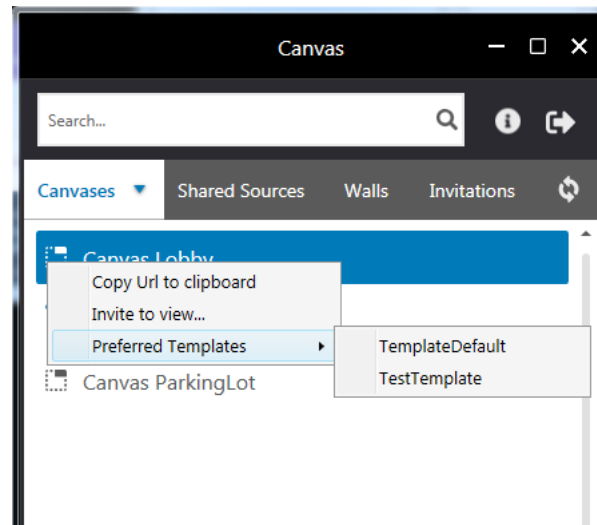


**Figure 7.27 - Right-Click Menu--Templates**

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2. From the **Canvases** panel in the **Canvas** dialog, right-click on a Canvas to which you want to apply the Preferred template.



**Figure 7.28 - Right-Click Menu--Templates**

3. Hover over the right-click menu or click the **Templates** menu item. The Templates menu item expands to reveal all the saved Preferred Templates.
4. Select and click the template that will be applied to the selected Canvas.

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### 7.5 Annotate Mode

The Canvas screen on Annotate mode is a touch screen. Users with annotation privileges can draw lines, circles, or anything to draw attention to a specific part of a display.

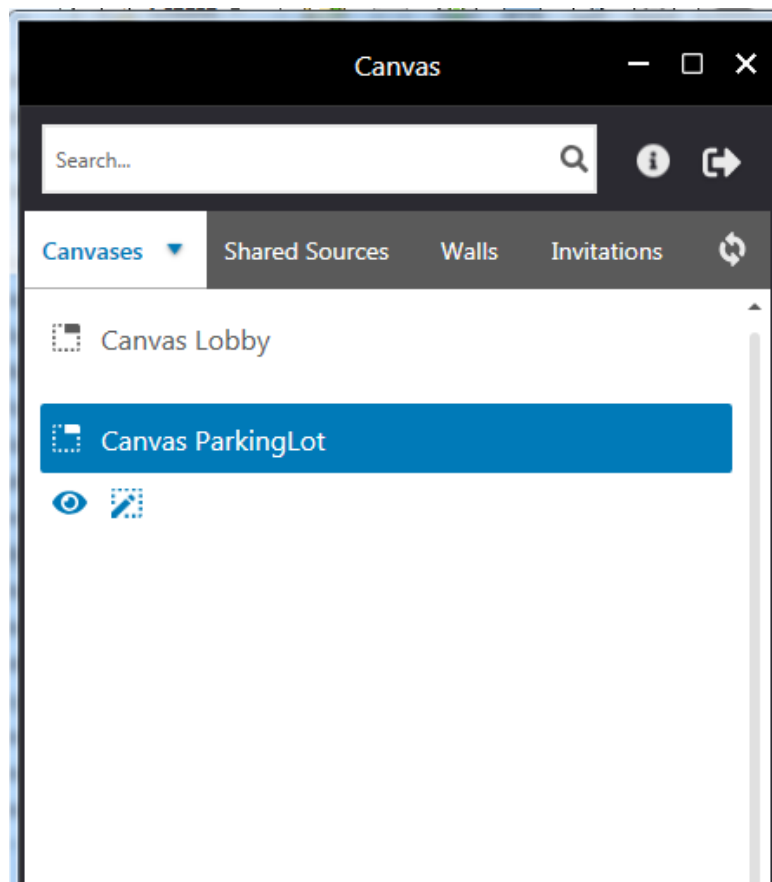
---

NOTE: The annotation layer has been **disabled** in **Catalyst 4K, C1000, and XL Series** processors for better performance. Annotations may be viewed on the PC Client used to control the Mimic on the Catalyst 4K.

---

#### 7.5.1 Starting Annotation

1. Select the canvas to be annotated from the list of Canvases under the **Canvases Tab**.
2. Click on the rectangular white Edit icon.

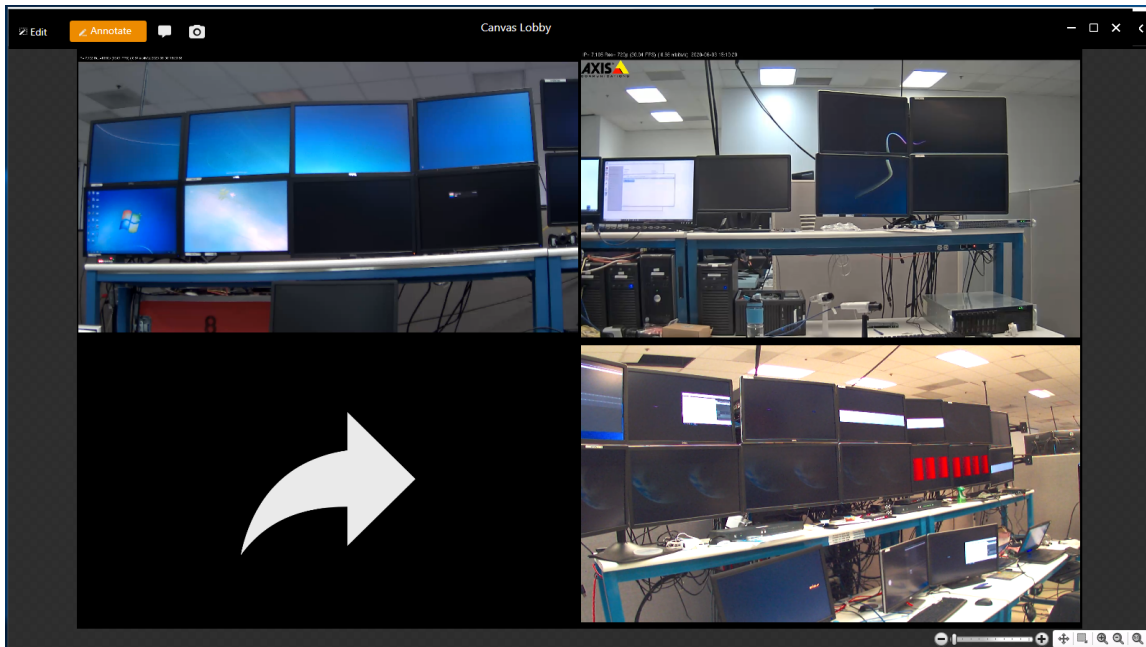


**Figure 7.29 - Canvas Panel—Canvases Tab**

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3. Click on the Annotate button and the window will change to the Canvas Annotation format and a drawing Toolbar shown below will appear on the left.



**Figure 7.30 - Annotation window**

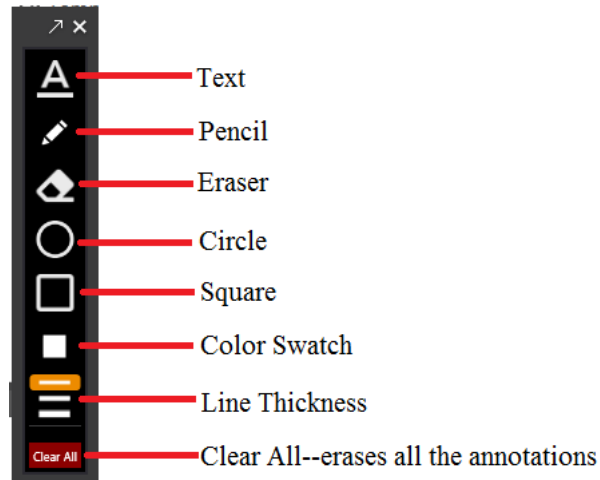


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### 7.5.2 Annotating Canvases

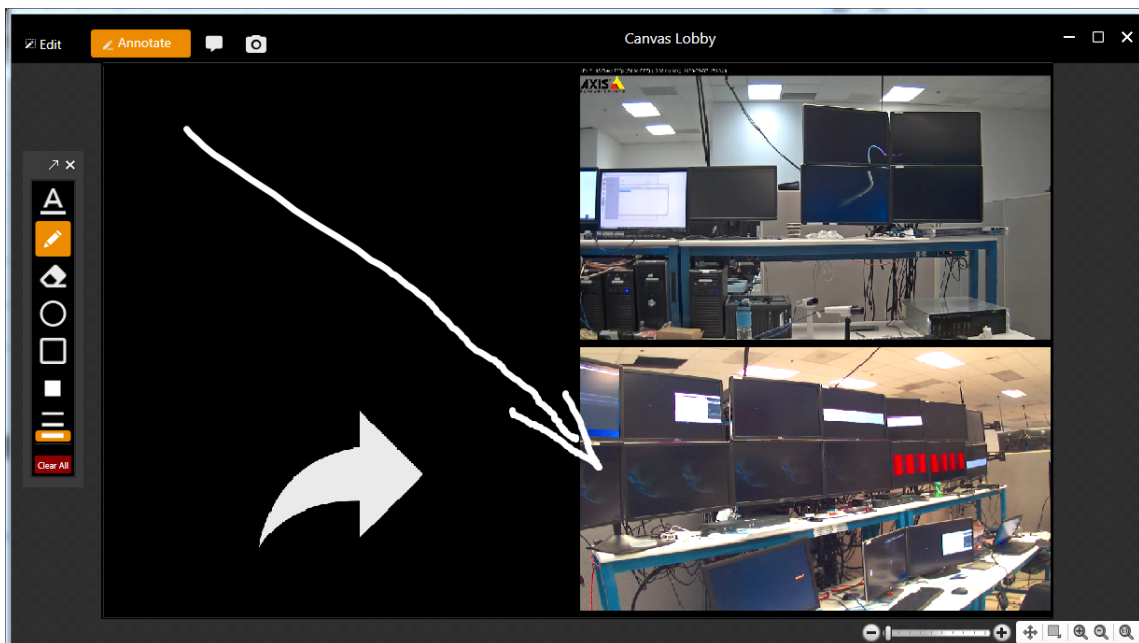
#### 7.5.2.1 Markups

1. Select a tool from the tool box appearing on the left of the Annotate tab.



**Figure 7.31 - Annotate Tool Box**

2. The following example shows an annotation made using the Pencil, Color Swatch, and Line Thickness tools.



**Figure 7.32 - Annotated Canvas**

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3. In the Text mode, a new line is created when the mouse is clicked or the Enter key is used. Once placed, text cannot be moved.

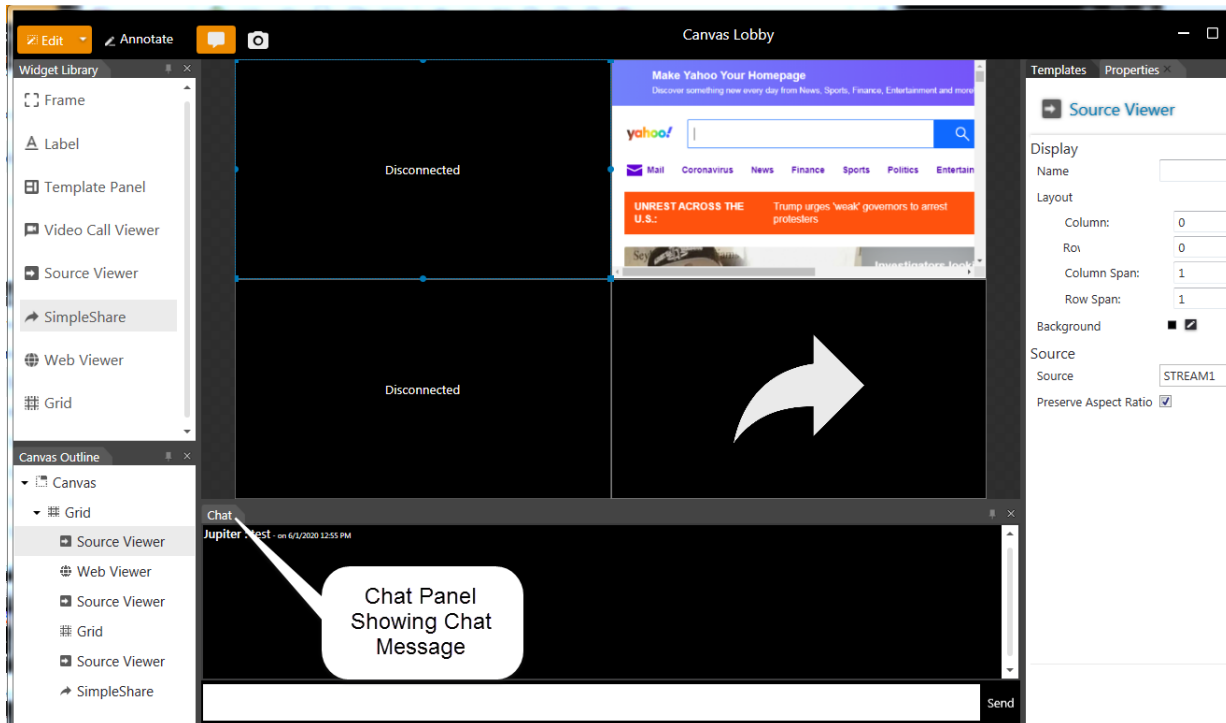
### 7.5.2.2 Screen Navigation

- Click on the + Magnifier in the lower right hand corner of the Annotation window, move the Magnifier icon over the center of the zoom view and click it repeatedly or use a mouse scroll.
- Click on the - Magnifier, move the icon over the center of the zoom out view and click it repeatedly or use a mouse scroll.
- Click on the rightmost Magnifier to return to full view.
- Click on the selection rectangle, select an area and the view zooms to that area.
- When zoomed, click on the 4-point arrow and use the hand to drag the zoomed view over the canvas.

## 7—Canvas Client

### 7.6 Using Chat on the Client

Click on the **Chat** Tab on the menu bar to turn on **Chat** mode. A **Chat Panel** (outlined in Orange below) will appear showing Chat messages similar to text messages on Mobile phones.



**Figure 7.33 - Chat Mode on Canvas**

As shown above, the **Chat** can occur simultaneously while annotating on or editing a Canvas.

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**NOTE:** The chat option is not available in **Catalyst 4K, C1000, and XL.**

---

## 7—Canvas Client

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### 7.7 Sending/Receiving Invitations

The **Invitations** tab on the **Canvas** panel allows users to invite one another to view a specific Canvas for an alert, notification, or any other issue. Viewing and sharing of the Canvas will depend on the permissions afforded to both parties—the sender of the invitation and the invitee.

#### 7.7.1 Sending an Invitation

1. Select a Canvas or a Source object from Canvas Client.
2. Right-click on the selected object, click **Invite to view...** on the menu item.

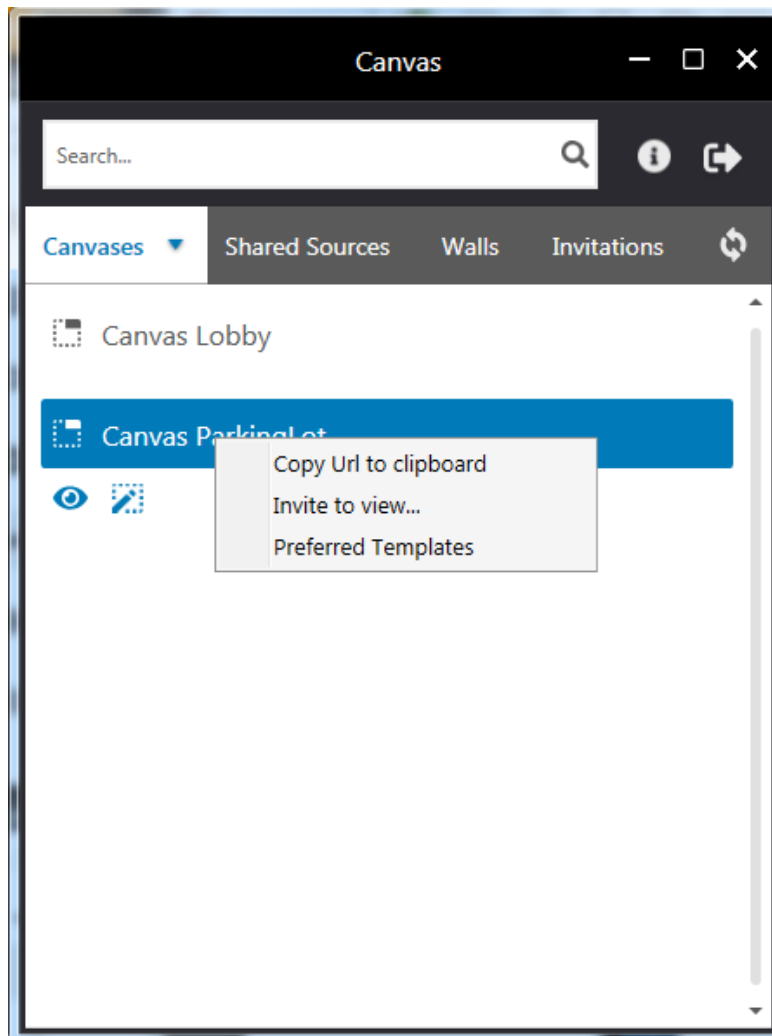
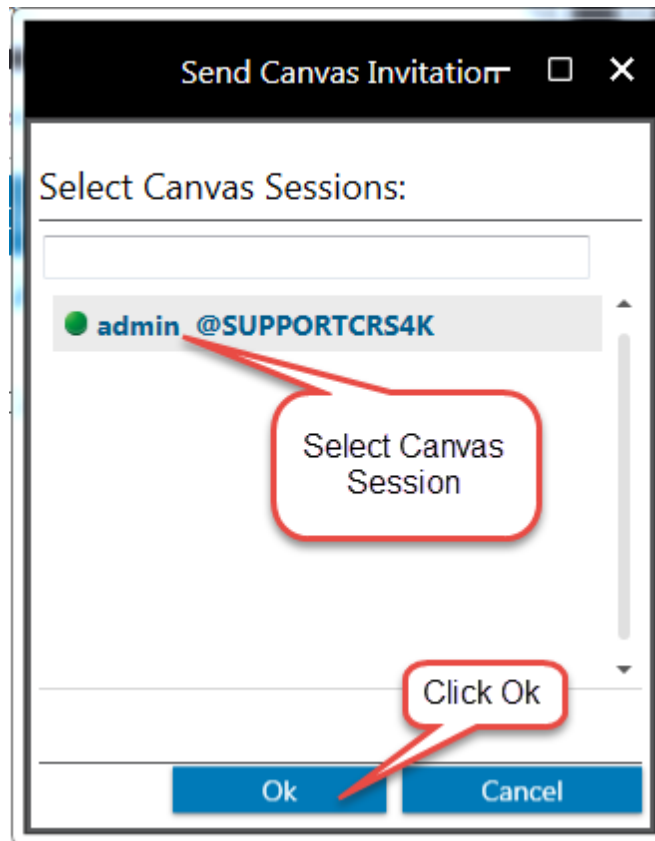


Figure 7.34 - Invite to View

## 7—Canvas Client

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The **Send Canvas Invitation** dialog-box opens up. It shows a list of the currently active sessions and their location (in the format `username@machinename`).



**Figure 7.35 - Select Canvas Session**

3. From the **Sessions** list, select one or more **Canvas Sessions**, click the **Ok** button. The invitation has been sent to the user(s).

## 7—Canvas Client

### 7.7.2 Receiving an Invitation

1. When an invitation arrives, the **Invitations** tab in the **Canvas Panel** is activated, much like a text message on a phone, with the added entry of "**date/time: user sender@machine has invited you to view Canvas/Source objectname.**"
2. The objectname text is clickable and color-coded like a **URL**. Click on the object **URL**, the object opens in a new Canvas Viewer (or the viewer is activated if Canvas is already open).

**Note** The **Invitations** tab contains all the invitation messages sent to the user since the Canvas client was connected. The server does not store any invitation entries.

In the following figure, the **Invitations** tab shows a user, DWright inviting another user to view a Canvas.

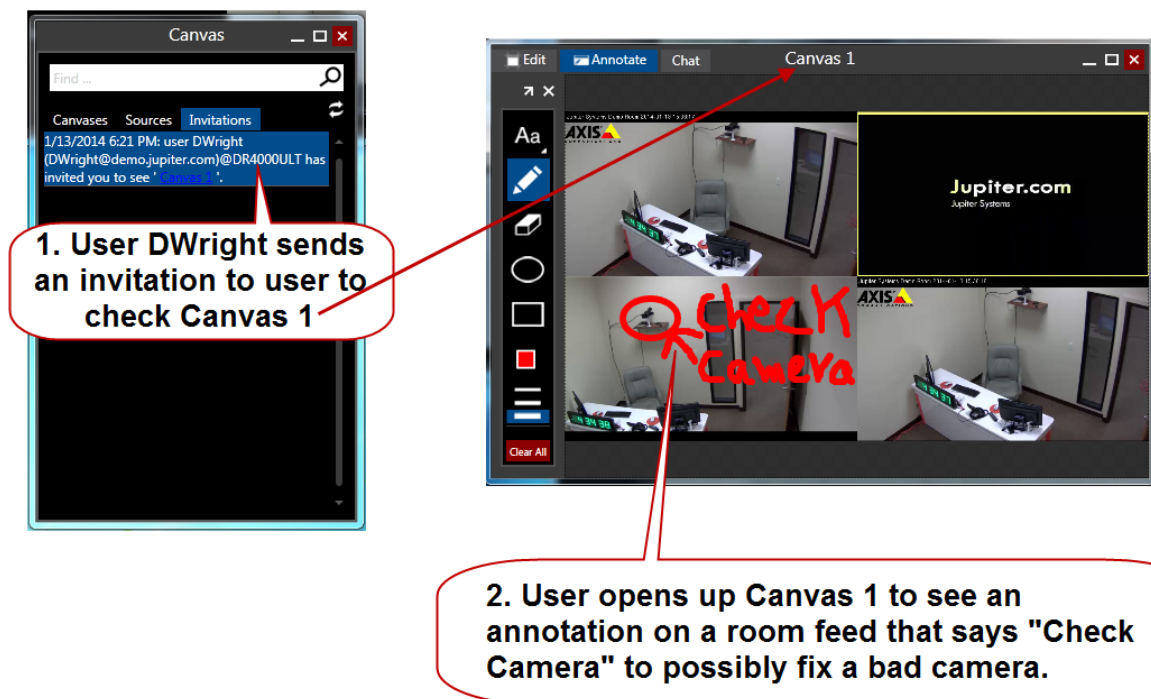


Figure 7.36 - Invitation

## 7—Canvas Client

### 7.8 Canvas Screen Capture

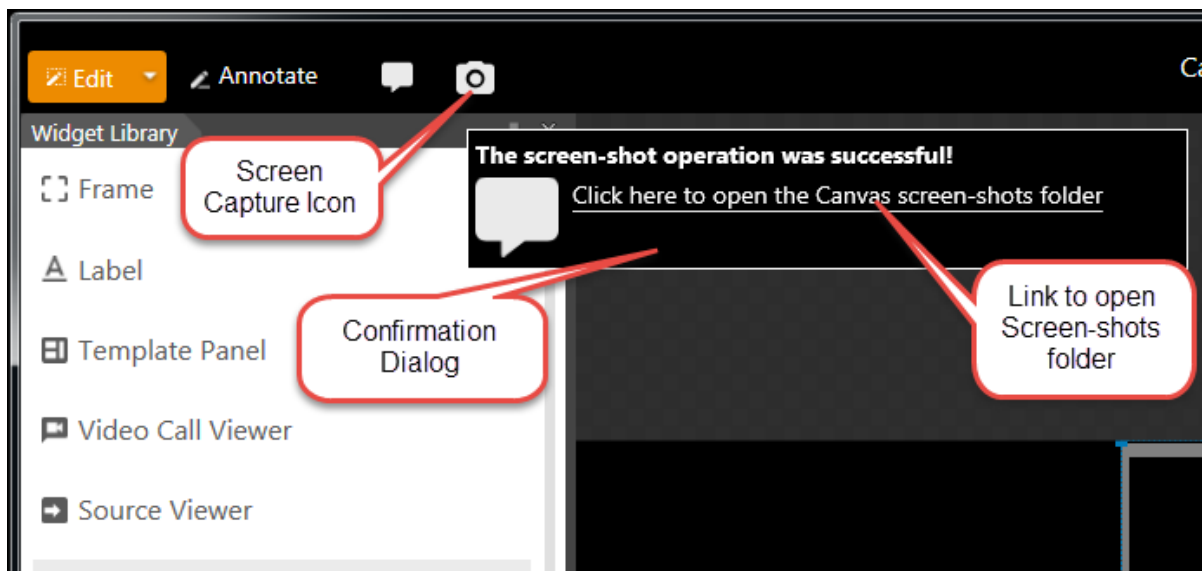
The **Screen Capture** feature has a **Camera Icon** on the Window Bar



and a Hot-Key **Ctrl+P** to activate the screen capture operation.

When the Screen Capture operation is initiated:

1. The Canvas area with the Annotation layer in the screen resolution of the Canvas Window is captured. The Capture grabs the composite view of the Canvas with Annotations, regardless of the Canvas Window mode—**Edit** or **Annotate**. No dialog-boxes or other Canvas Controls will be captured.
2. Another option allows capturing the individual Sources on the Canvas in their native source resolution. This option is a Global Server setting.
3. Chat messages will be captured as text.
4. The **Canvas Capture**, the **Source Captures**, and the **Chat Messages** are all collected and saved in separate folders per Screen Capture.
5. The root folder for the Screen Capture sub-folders is configurable in the Canvas Server.
6. A **Confirmation Dialog** will appear displaying the folder name of the saved package if the Screen Capture operation was successful:

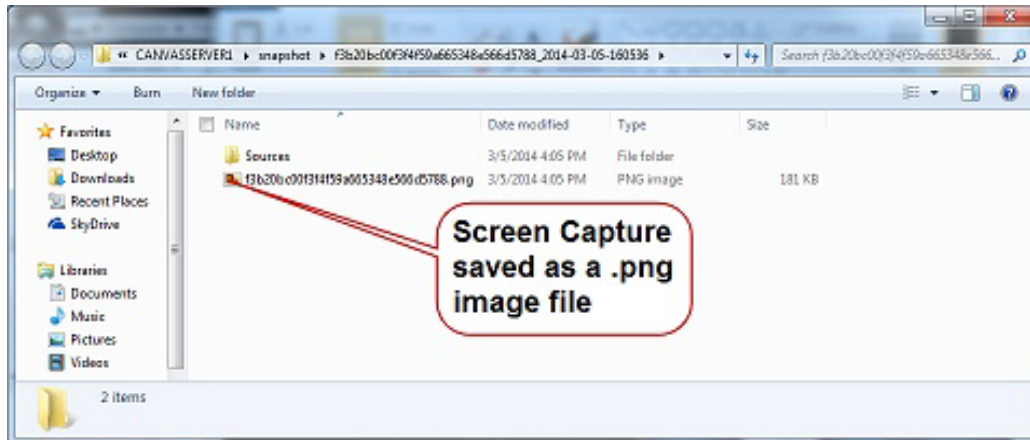


**Figure 7.37 - Screen Capture and Confirmation Dialog**

## 7—Canvas Client

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7. Click on the **Confirmation Dialog**, the package folder containing the last saved Screen Capture will open in Windows Explorer.



**Figure 7.38 - Snapshot Folder containing Screen Capture**

8. All Screen Captures will be saved as lossless **PNG** or lossy **JPEG** files. The file format is a Global Server setting.

The following Metadata will be embedded in the Capture files:

- The User Name of the user who took the Screen Capture
- The Date and Time of the Screen Capture
- The Name of the Canvas Object

---

**NOTE:** The snapshot option is not available in **Catalyst 4K, C1000, and XL.**

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## 7—Canvas Client

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### 7.9 Audio Support

Canvas supports audio from all its sources for PC, Catalyst, and Jupiter Mobile Clients. The audio stream can be played on speakers attached to PC clients, Fusion Catalyst clients and on Mobile Clients.

**Table 7. 6: Canvas Audio**

Feature	Description
Codecs	G.711 u-law, AAC-LC, AC-3, PPM
Cameras Supported	All Cameras supporting native H.264
Default Mode	Audio is muted on all sources.
For PC Clients	Audio Downstream is supported.
For Mobile Clients	Audio upstream and downstream are supported.
Audio is supported in Fusion Catalyst 4000 and 8000	Through Mimic (icons inside Canvas->wireframe)

Source audio is muted and unmuted on the right-click drop down menus on both the Desktop Viewer windows and Canvas Source windows.

Audio from multiple Sources may be heard simultaneously.

#### 7.9.1 Source View Dropdown

Right-clicking in the **View** window of a **Source** opens a drop down menu:

- **Activate Remote Cursor** - see [Section 8.10 Remote Cursor](#)
- **Screenshot** - Capture file specified in [Chapter 6. Administrative Functions](#)
- **Preserve Aspect Ratio** - uncheck the box to fill the window
- **Mute/UnMute Audio** - shows only when a audio channel is present

#### 7.9.2 Canvas Window Dropdown

Right-clicking a window in a **Canvas** View opens a drop down menu:

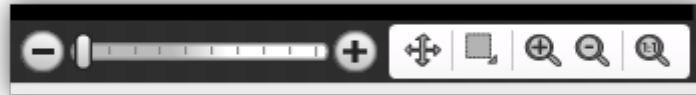
- **View** - Opens a separate View window for that Source
- **Control** - see [Section 8.10 Remote Cursor](#)
- **Mimic** - opens a Mimic window associated with that Source
- **Screenshot** - Capture file specified in [Chapter 6. Administrative Functions](#)
- **Mute/UnMute Audio** - shows only when a audio channel is present

## 7—Canvas Client

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### 7.10 Pan and Zoom

Canvas supports the Pan and Zoom feature to let users digitally zoom the window from 100-500% by moving the pivot pointer in the Pan and Zoom Control Bar:



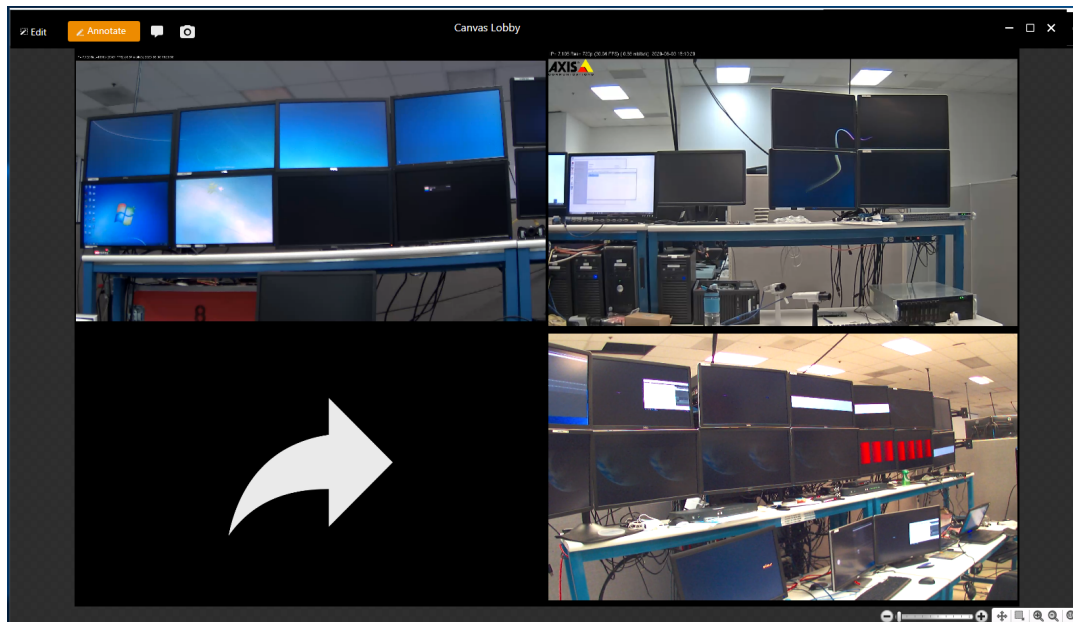
**Figure 7.39 - Pan and Zoom Control Bar**

**Table 7. 7: Pan and Zoom**

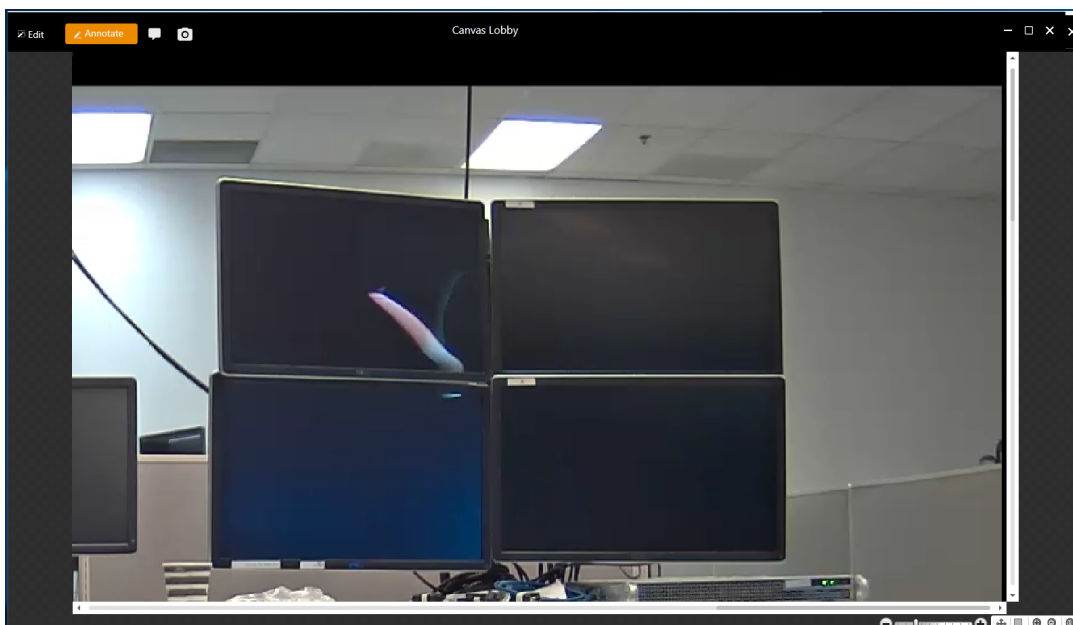
Feature	Description
User clicks on any view source	The Source automatically zooms to fill the window and cover the board.
ControlBar	Clicking the Source, engages the zoom feature and a Control Bar appears on the bottom right corner of the window.
<ul style="list-style-type: none"> <li>• Move Button</li> </ul>	The user can pan the window (this does not move the camera, even if it is a PTZ camera).
<ul style="list-style-type: none"> <li>• Restore Button</li> </ul>	The user can zoom the specific rectangular area.
<ul style="list-style-type: none"> <li>• Zoom-In Button</li> </ul>	The user can zoom-in on a Canvas board.
<ul style="list-style-type: none"> <li>• Zoom-Out Button</li> </ul>	The user can zoom-out on a Canvas board.
<ul style="list-style-type: none"> <li>• Reset Button</li> </ul>	This resets all the zooms and returns to the initial view.

## 7—Canvas Client

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**Figure 7.40 - Canvas Source before Zoom-Out**



**Figure 7.41 - Canvas Source in Zoom-Out Mode**

## 7—Canvas Client

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### 7.11 Client Error Log Files

Error Log files concerning Canvas Panel, Canvas Viewer, Source Viewer, and Binding tool can be found in the following location:

**C:\ProgramData\Canvas\Client\Logs\**

## 7—Canvas Client

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**Jupiter**

## Chapter 8—Canvas Mimic

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### 8. Canvas Mimic

The Canvas Mimic allows the user to manipulate windows on a wall from a Canvas Client on a remote system. The Canvas Mimic provides keyboard and mouse access to the remote desktop and allows the user to zoom windows in and out, view the list of windows, and adjust the layout geometry (X,Y coordinates) of the desktop. Layouts of **Sources**, **Canvases** and **Mimic Objects** can be saved and loaded.

The **Canvas Mimic** service and **Remote Cursor** are installed on all Jupiter hardware by default. On non-Jupiter hardware, **Canvas Mimic** service and **Remote Server** are installed when a complete client is installed.

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**Note**      **Internet Explorer 11** or later versions or **Chrome** are required for optimal performance of **Canvas Mimic**.

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## 8—Canvas Mimic

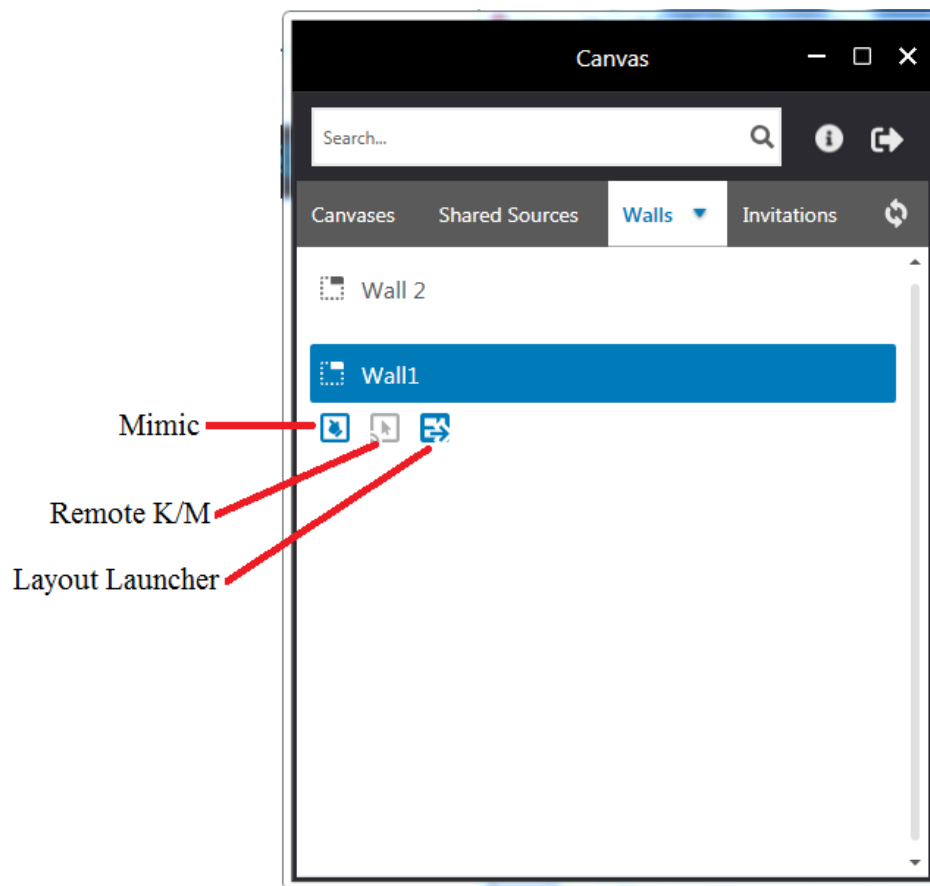
---

### 8.1 Canvas Mimic Selection

A Mimic Window for a Client wall can be accessed two ways:

On the **Canvas Client Source Panel**:

1. Select a Source that is set up in the Administration UI as a Mimic and click on the **Mimic** icon.



**Figure 8.1 - Canvas Source Panel—Mimic Icons**

2. This opens the Canvas **Desktop Mimic Object** window where all the source windows on the desktop can be viewed.

Multiple **Mimic** sources may be set up in the Administration UI to provide access to multiple display walls. The Remote Mimic shown may access a different display wall.



## 8—Canvas Mimic

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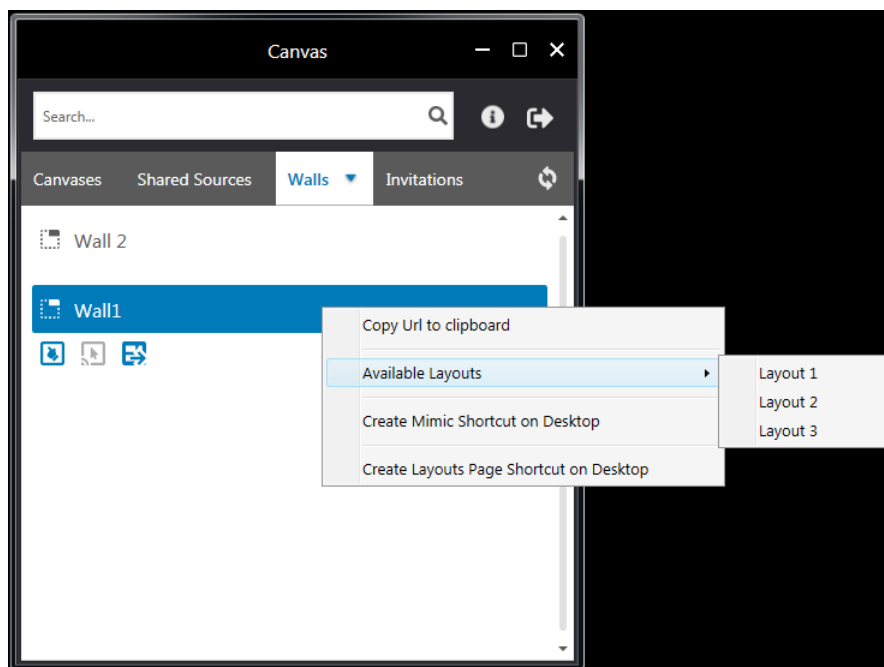
On the **Canvas Client Wall Panel**:

1. Select a **Mimic Source** and left-click to open the **Mimic Window**.

**OR**

2. On the Canvas Wall panel, select a **Mimic Source**, right-click to:

- **Copy URL to Clipboard** copies the URL of the Mimic Server
- **Available Layouts** - Click on a **Layout name** to open the Layout in the **Mimic Window**.
- **Create Shortcut on Desktop** provides direct access to the **Mimic Window**.
- **Create Layouts Page Shortcut on Desktop**

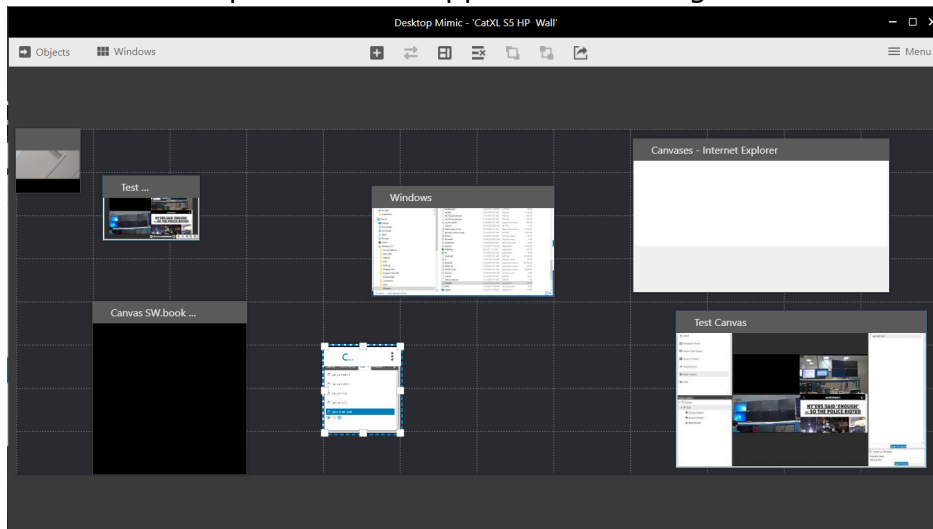


**Figure 8.2 - Canvas Wall Panel - Mimic Layouts**

## 8—Canvas Mimic

### 8.1.1 The Mimic Window

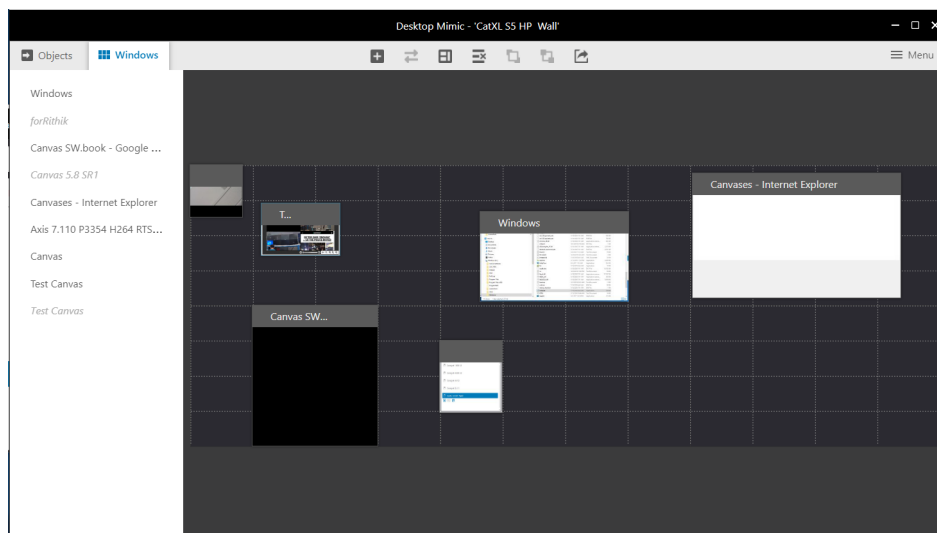
The windows can be viewed, moved and scaled to enlarge or reduce their size. Live video previews will appear for working IP streams only.



**Figure 8.3 - Desktop Mimic**

#### 8.1.1.1 Mimic Windows List

1. Select the **Windows** icon in the upper left corner of the Desktop Mimic.
2. A list of the Sources and Canvases on the wall will appear.
3. Any item in the list that is grayed out is minimized and will reappear when clicked on.

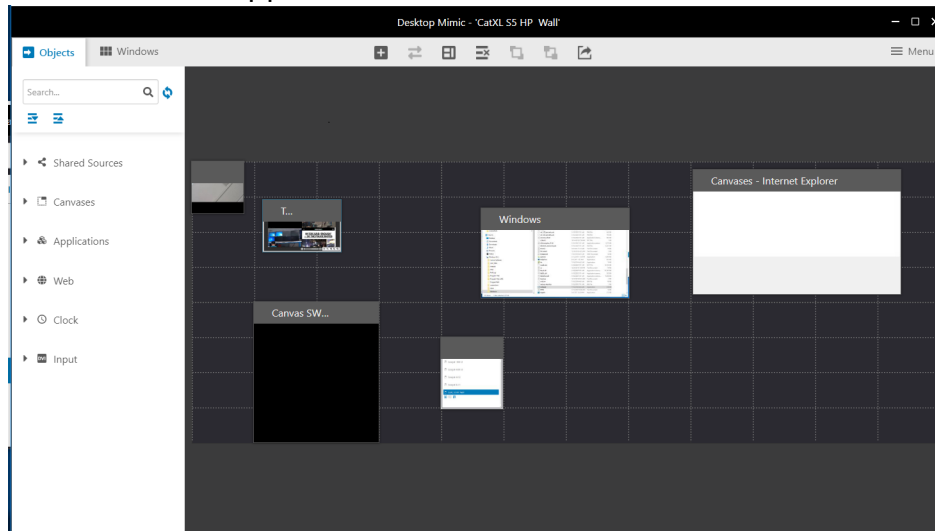


**Figure 8.4 - Mimic Windows List**

## 8—Canvas Mimic

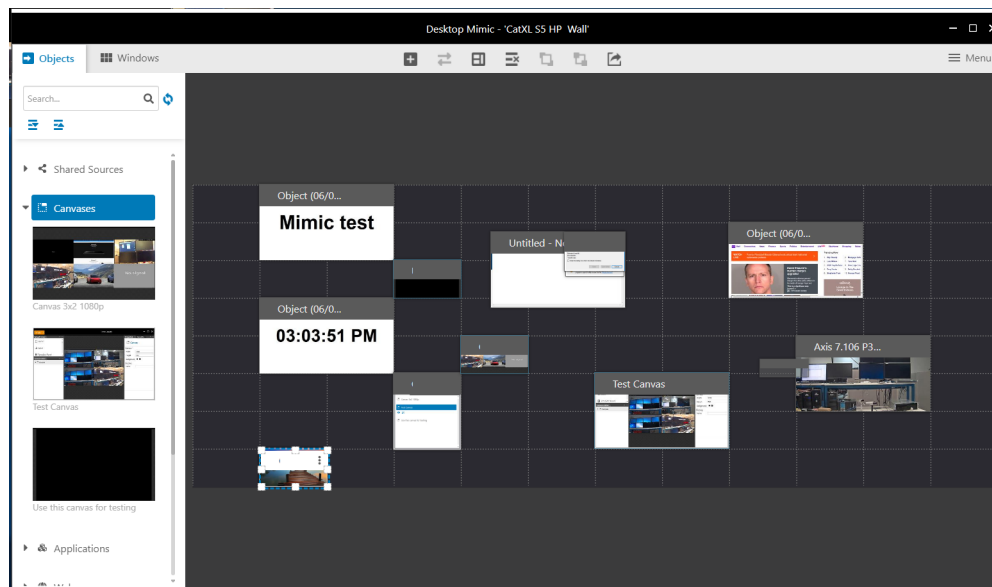
### 8.1.1.2 Mimic Objects List

1. Select the **Objects** icon in the upper left corner of the Desktop Mimic.
2. A list of the Objects, including shared sources, canvases, and web sources will appear.



**Figure 8.5 - Mimic Sources List**

Clicking on an Object type will reveal a dropdown menu of sources of that type as shown in [Section 8.6 Mimic Sources List](#). Drag and drop a source onto the grid to open a window of the source

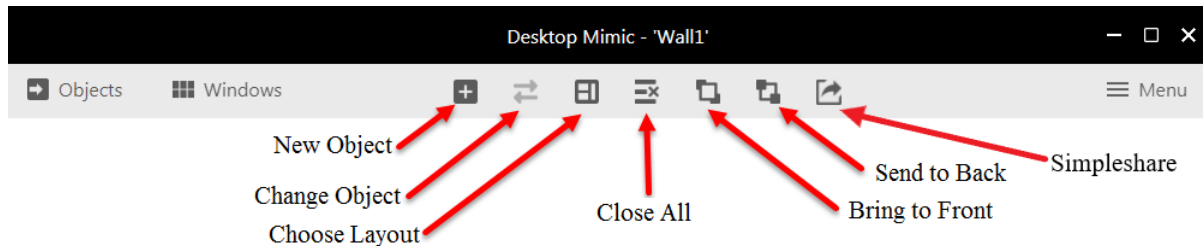


**Figure 8.6 - Mimic Sources List**

## 8—Canvas Mimic

### 8.1.1.3 Mimic Menu bar Shortcuts

The six icons in the middle of the Menu bar are shortcuts to commonly used functions.



**Figure 8.7 - Mimic Shortcut Icons**

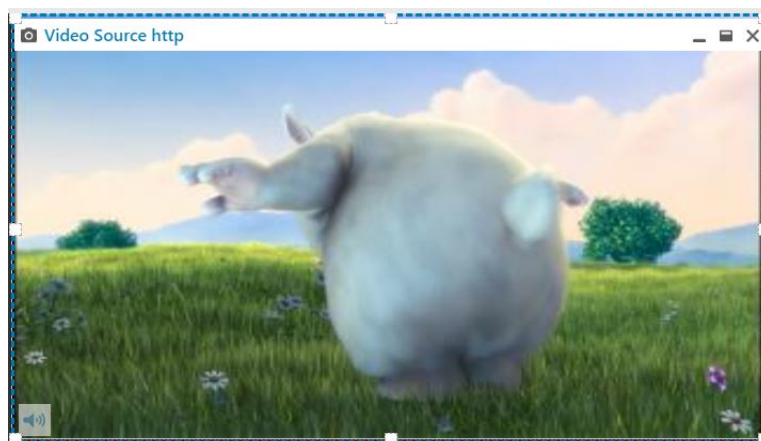
Using these functions is described in Sections [8.2](#) and [8.3](#).

Keyboard shortcuts can be used to access these functions:

- New Object: ALT+Shift+N
- Change Object: ALT+Shift+C
- Choose Layout: ALT+Shift+L
- Close All: ALT+Shift+A
- Bring to Frpnt: ALT+Shift+F
- Send to Back: ALT=Shift+B

### 8.1.1.4 Mimic Source Audio Control

Sources with audio enabled will show the **Speaker Icon** in the lower left corner. Click on the icon to **Mute** and **UnMute** audio from the source.



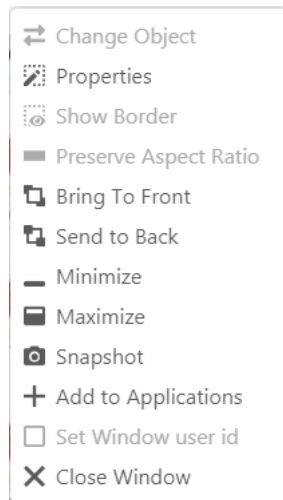
**Figure 8.8 - Audio Control on Mimic Source**

## 8—Canvas Mimic

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### 8.1.1.5 Mimic Window Right Click Options

The following menu pops up when a Mimic Window is right-clicked.



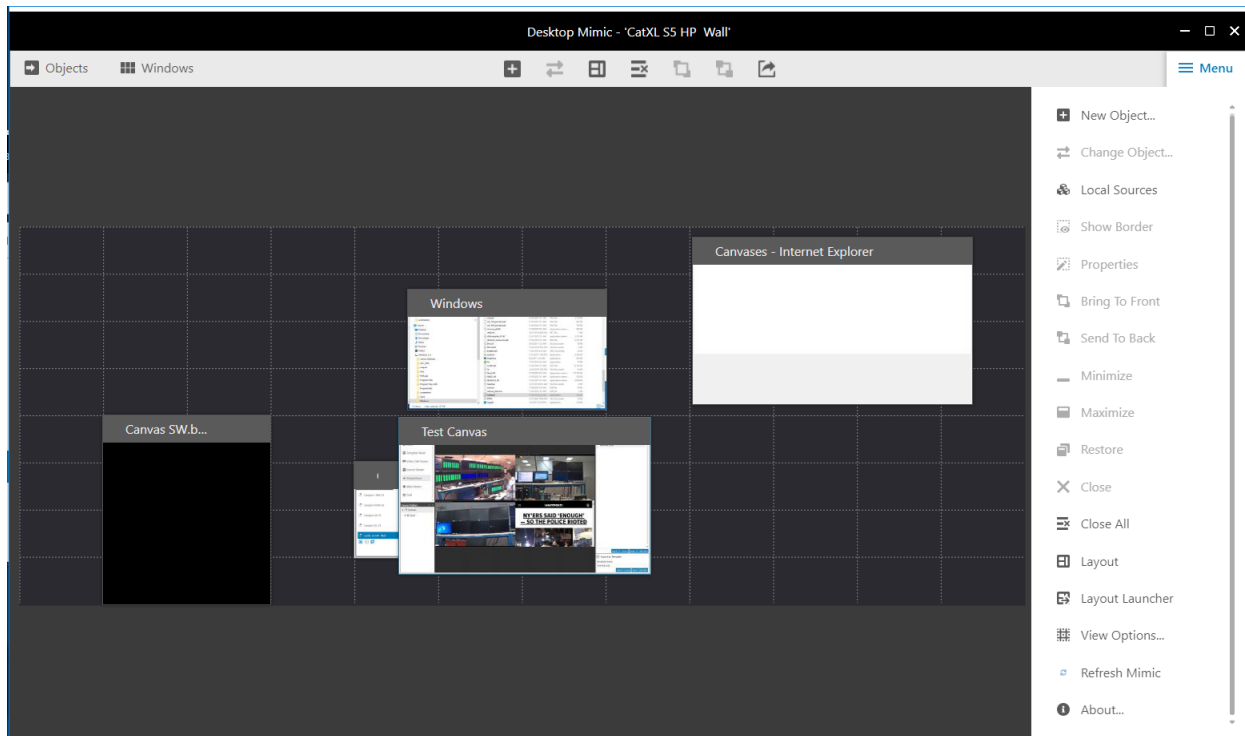
**Figure 8.9 - Mimic Window Right Click Dropdown**

- **Change Object**  
The Select Object page appears, allowing the Object in that window to be changed.
- **Properties (Size and Location)**  
Displays window state, X and Y origins, Width and Height. A window may be positioned off-screen by specifying coordinates outside the display range.
- **Bring to front/ Send to back**  
Sets the window in front or behind others on the wall. The windows on the wall do NOT have the transparency of Mimic windows.
- **Show Border**  
Shows or hides Frame borders as described in [Section 8.5 Borders](#).
- **Add to Applications**  
This field is available only when the window is NOT a Canvas Object. When **Add to Applications** is selected, the **Application Edit Object** screen described in [Section 8.4.1 Application Edit](#) appears. This allows a Windows application and associated files to be captured as a Canvas Application.
- **Snapshot**  
Takes a screenshot of the Mimic window.
- **Set Window user id**  
Allows the user to manually change a Mimic Window's ID.

## 8—Canvas Mimic

### 8.1.1.6 Mimic Menu

Clicking on the Menu button in the upper right corner of the Mimic window opens a drop down list of mimic functions used to create and configure Mimic Objects and Layouts. See [Section 8.2 Adding a Shared Object](#) through [Section 8.6 Closing Mimic Windows](#) on page 288.



**Figure 8.10 - Mimic Menu**

## 8—Canvas Mimic

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### 8.2 Adding a Shared Object

Shared Objects may be created in the **AdminUI** described in Chapter 6.

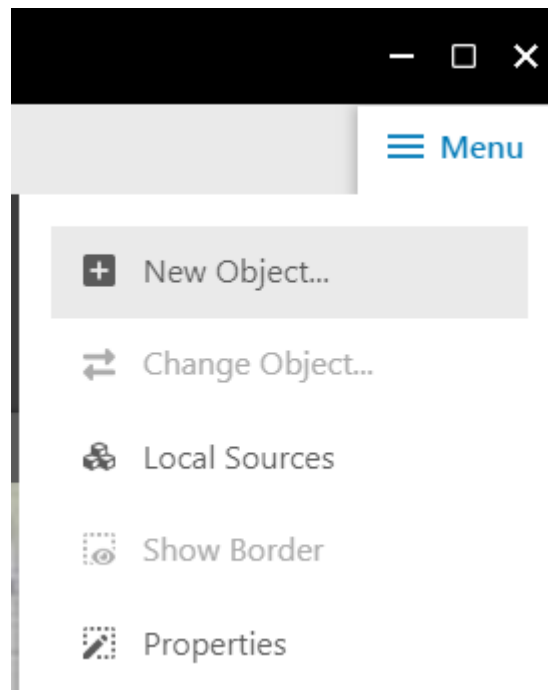
Shared Objects may also be created by building a batch file with all of the attributes described in this section. See [Appendix F.3. Canvas Source Batch Files](#) on page 345.

---

**CAUTION:** New Objects cannot be created on Touchscreen Mimics.

---

1. Click the **New Object** icon on the **Menu** bar or Select **Mimic—>Menu—>New Object**



**Figure 8.11 - New Object**

2. Draw a rectangle representing the new window on the Mimic desktop (left-click and hold mouse button down to drag).

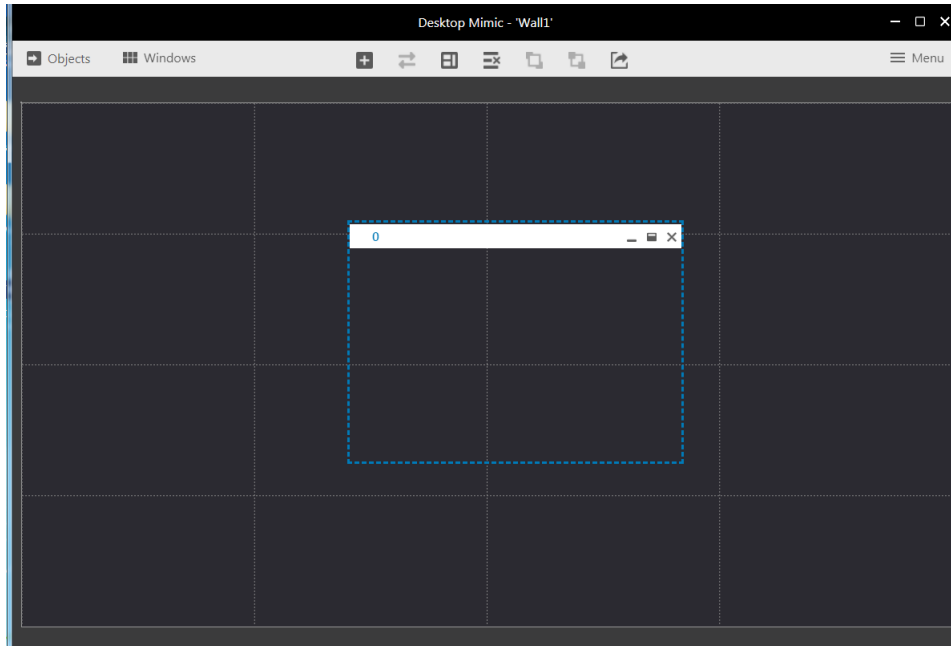
---

**NOTE:** A Mimic Window may be positioned off-screen by holding down the **Shift** key while dragging the source onto the Mimic.

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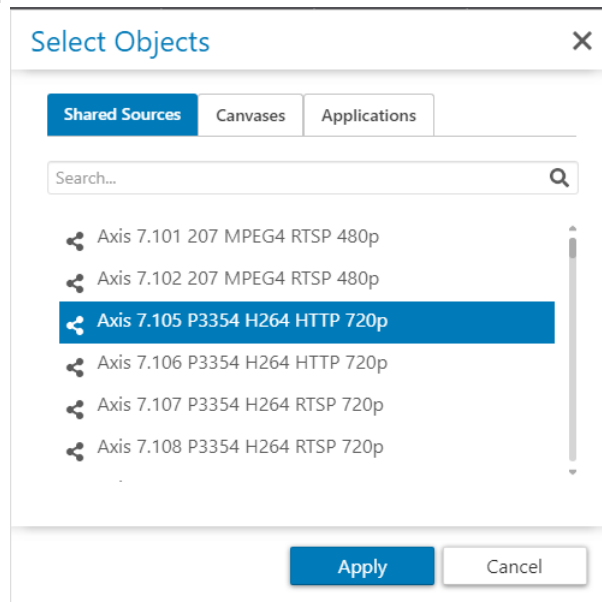
## 8—Canvas Mimic

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**Figure 8.12 - Draw a Rectangle**

- When the mouse button is released, the **Select Objects** dialog appears. The tabs at the top bring up lists of **Sources**, **Canvases** and **Applications**. Choose one.



**Figure 8.13 - Select Object List**

- Click **Apply** to place the Source window on the Mimic. Reposition the new Source window as desired.



## 8—Canvas Mimic

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### 8.3 Changing Mimic Objects

An Object in a Mimic Layout may be changed to any other source, regardless of type. An object can be changed to a different Canvas or Source or from a Canvas to a Source.

1. Highlight the Object that you want to change and click the **Change Object** icon in the **Menu bar**, **Menu List** or **right-click list**.
2. Select the replacement object from the Canvases or Sources Tab lists.
3. The **Select Object** menu appears as above.
4. Click **Apply** and the new source appears in the window.

### 8.4 Local Sources

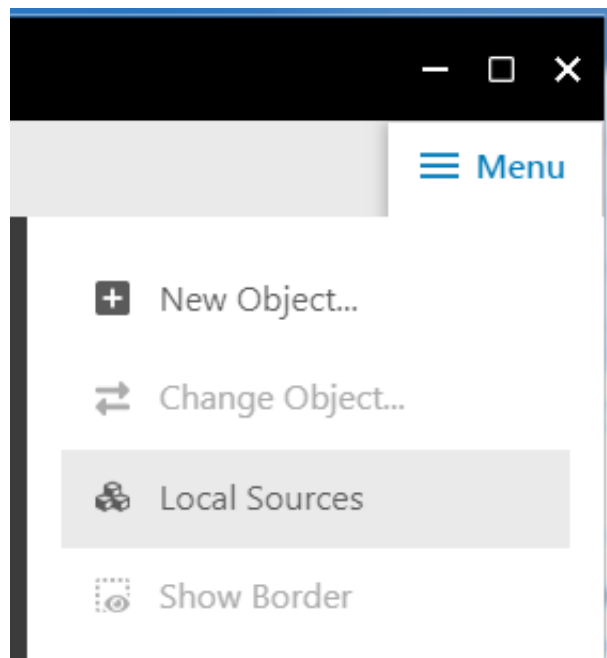
Local Sources may be created in the Desktop Mimic interface as described below. Batch files with a large number of sources may be created using a **Canvas Source Object** file described in **Appendix F**.

---

CAUTION: New Objects cannot be created on Touchscreen Mimics

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1. Select **Mimic—>Menu—>Local Sources**

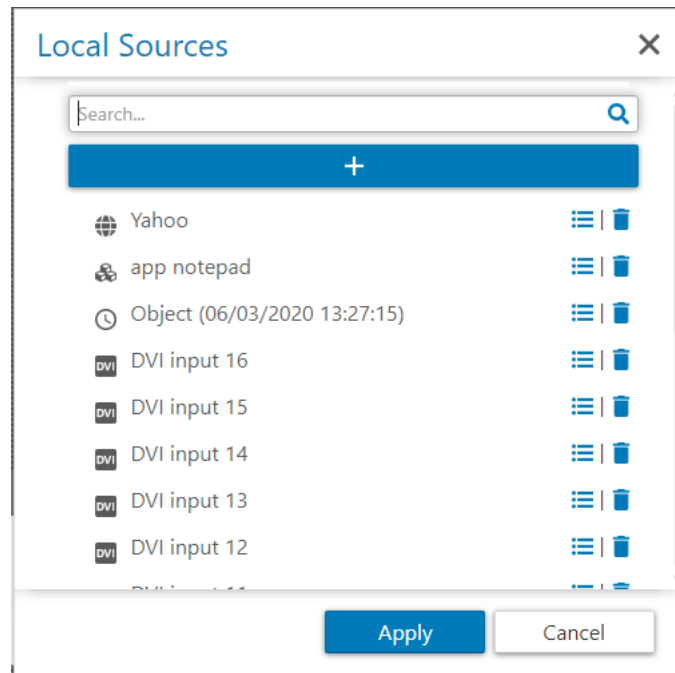


**Figure 8.14 - Local Source**


## 8—Canvas Mimic

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2. The **Local Source** dialog box appears showing saved Objects:



**Figure 8.15 - Saved Local Sources**

3. Click on the **Edit** icon  to view and edit settings of existing **Local Sources**.
4. Click on the **+** bar to create a new **Local Source**.
5. Click the down arrow to view the Object Types:
  - a. **Application**
  - b. **Image**
  - c. **Text**
  - d. **Clock**
  - e. **Direct Input**
  - f. **Web**
6. Once the Object Type is selected, a unique Edit Object box appears for each type of Object. See Sections [8.4.1](#) through [8.4.6](#).

## 8—Canvas Mimic

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### 8.4.1 Application Edit

#### 8.4.1.1 Application Objects Overview

**Mimic Application Objects** can be created with any Windows application. Creating an Application Object registers the application in Canvas. Once set up, Application Objects provide the following functionality:

- Open and close applications with layouts.
- Keep applications alive between layout changes.
- Drag and drop objects on the desktop to open applications from the Object Browser.
- Invoke applications manually from the Object Browser.  
Can be used as a short cut to run a program – easier than menu item
- Run applications with the Scheduler.

#### 8.4.1.2 Using the Application Object

You can invoke Application Objects interactively or save them as Application windows in a layout.

Canvas recognizes windows by their Window Descriptor. The window descriptor specifies the window title, the window class, and the process name. The window descriptor is a signature that uniquely identifies an open window on the Windows Desktop.

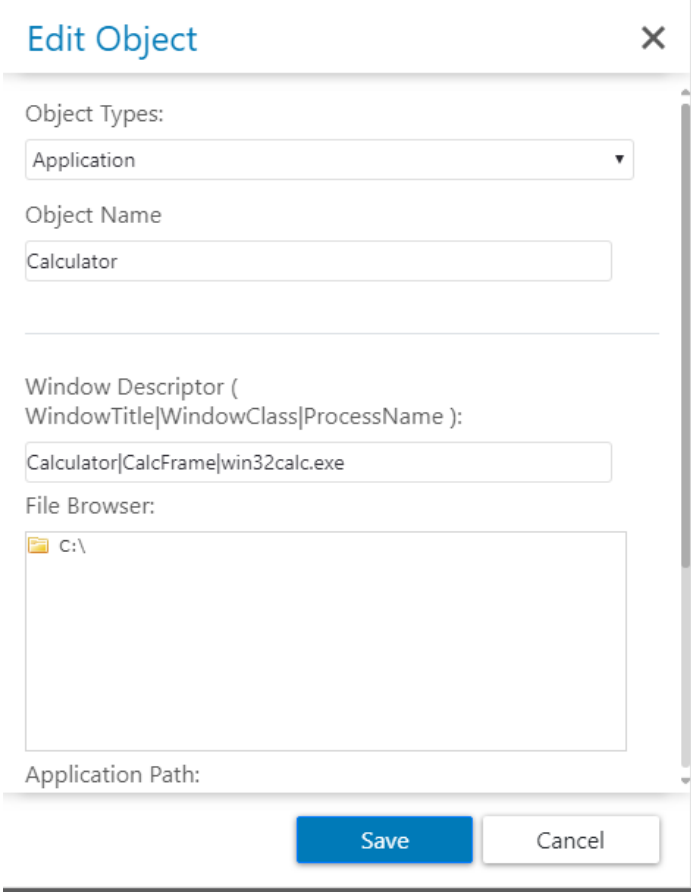
The Window Descriptor contains information about how the window is created. Canvas will automatically include application windows when the user saves them in layouts.

#### 8.4.1.3 Creating Application Objects

1. Open the desired application on the Wall Controller desktop.
2. Run the Wall Mimic on a Client either locally or remotely on a workstation.
3. Identify the application window on the **Wall Mimic**, right click on the window and select **Add to Applications** on the dropdown.
4. The properties dialog for the new object opens. The **Window Descriptor** and **Application Path** fields are populated automatically.

## 8—Canvas Mimic

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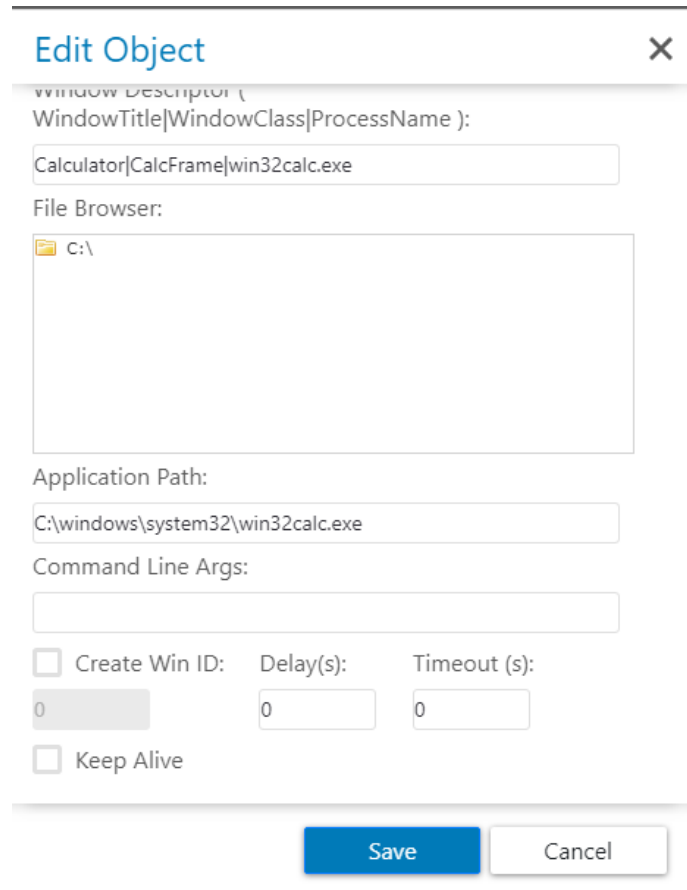
**Figure 8.16 - Application Edit**

5. **Object Name:** Specify a unique name. References to this object are made by this name. The object name must be a valid Windows file name and cannot contain the `\* ? | < > \ / '` characters.
6. **Window Descriptor:** Specifies a unique signature from Windows that identifies the window within Canvas.

The window descriptor consists of three fields: window title, window class, and the process name. These fields are separated with the pipe character (`|`). Wild-cards can be used in any of the descriptor fields.

## 8—Canvas Mimic

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**Figure 8.17 - Application Edit**

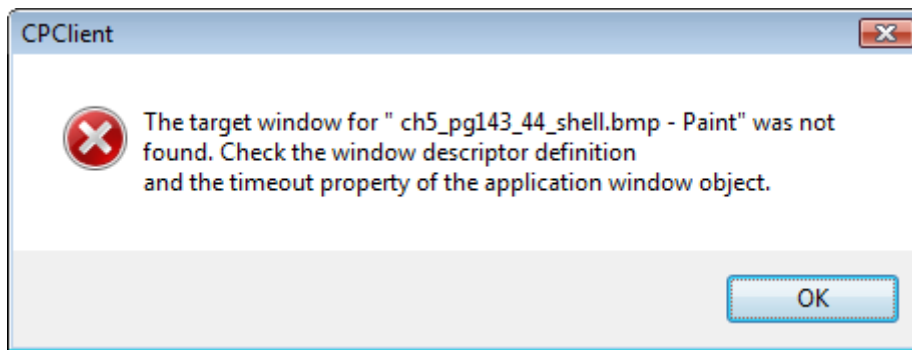
7. **Application Path:** Specifies the path to start the application and the parameters to be used if executable fails. If not passed fully from Windows, these parameters need to be manually entered. Refer to the Command Line Editing of the application.
8. **Command Line Args:** Used to provide execution instructions to the application, including user name and password for login.
9. **Create Win ID:** When Canvas creates an application window, it assigns a random server generated window ID. If a control system will be used, check the Create **Win ID** box. select the **Create with User-assigned Window ID** check-box and type in a window ID number in the box below. This must be a unique number greater than 1 and less than 10,000.
10. **Keep Alive:** Use if a login is required to start the application or it is slow to start. Keeps the application open, but the window minimized when not being viewed.

## 8—Canvas Mimic

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11. **Delay:** Specifies a delay in starting the application to allow canvases to open.
12. **Timeout:** Specifies the maximum amount of time the Catalyst will take to find a window descriptor after the application has started.

You will receive the following error message when the server cannot identify the window as defined by the Window Descriptor within the specified Timeout time. Check the window descriptor or increase the timeout to avoid this error.

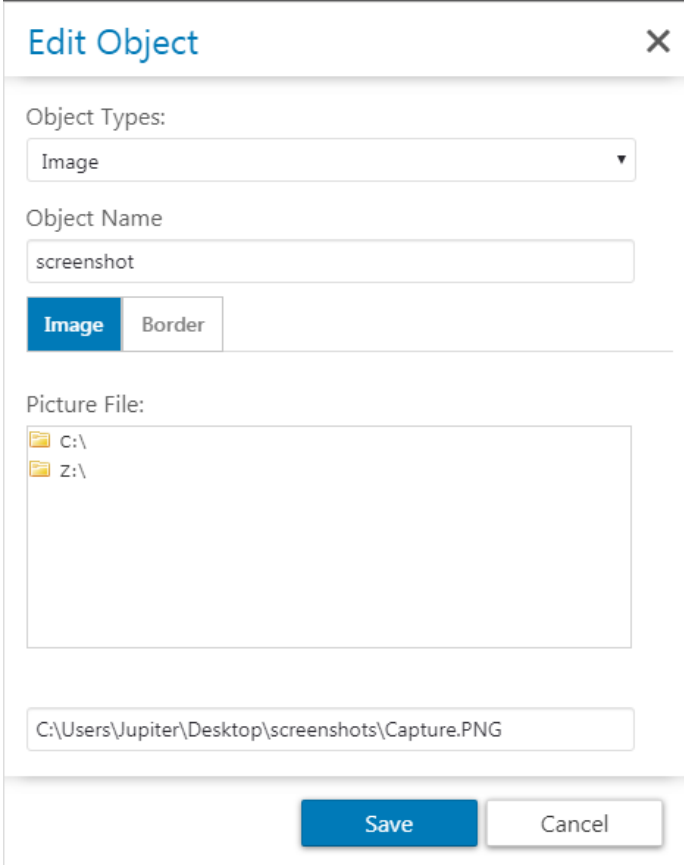


**Figure 8.18 - Window Unidentified Error**

## 8—Canvas Mimic

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### 8.4.2 Image Edit



**Edit Object** [X]

Object Types:  
Image

Object Name  
screenshot

Image  Border

Picture File:  
C:\  
Z:\

C:\Users\Jupiter\Desktop\screenshots\Capture.PNG

Save Cancel

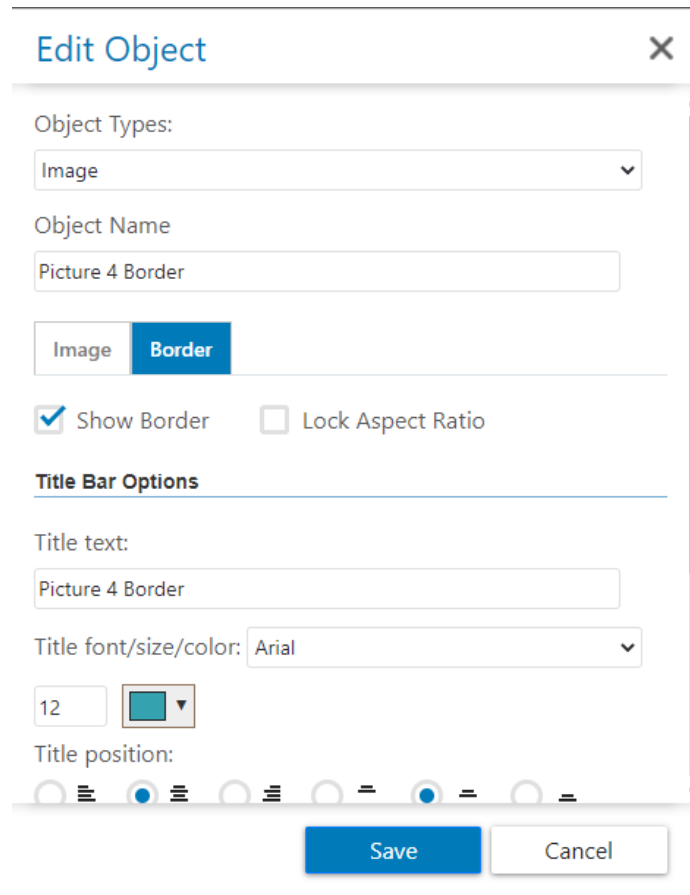
**Figure 8.19 - Image Edit**

1. Type in the **Object Name** and **Application Path** as shown.
2. Double-click on the drive folder to browse.

## 8—Canvas Mimic

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### 8.4.2.1 Image Border

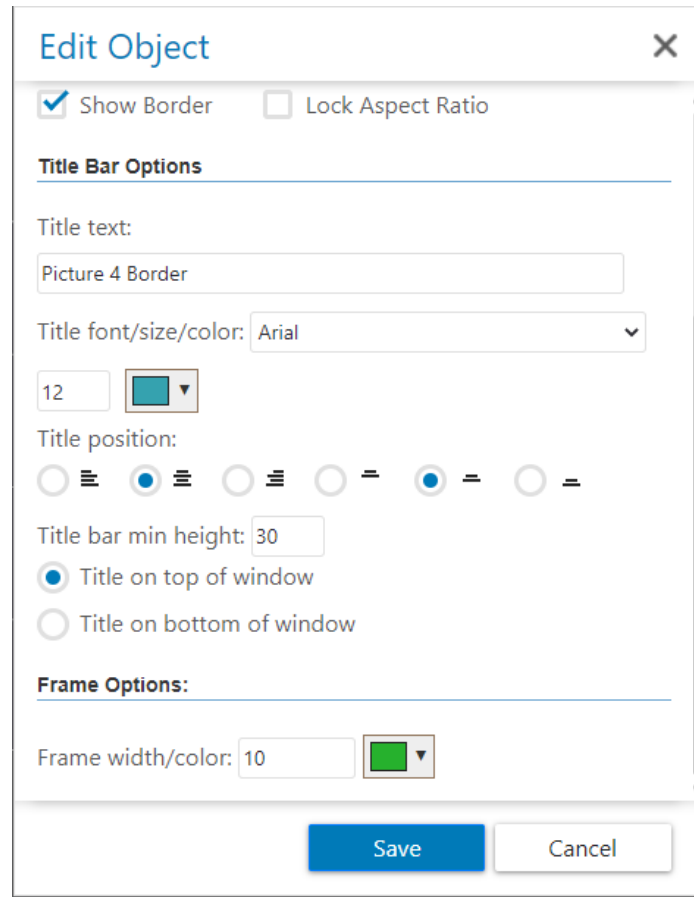


**Figure 8.20 - Image Border**



## 8—Canvas Mimic

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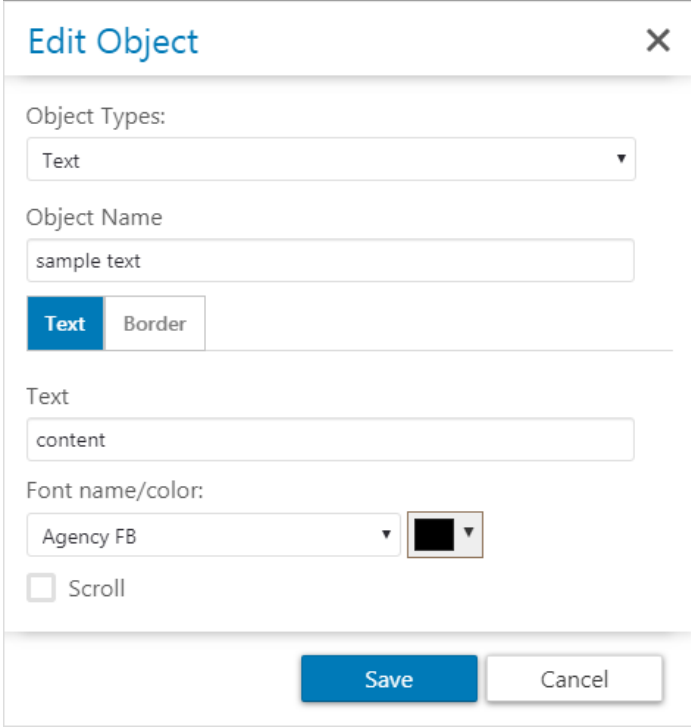


**Figure 8.21 - Image Border**

## 8—Canvas Mimic

---

### 8.4.3 Text Edit



**Edit Object** [X]

Object Types:  
Text

Object Name  
sample text

**Text** Border

Text  
content

Font name/color:  
Agency FB [Color: Black]

Scroll

Save Cancel

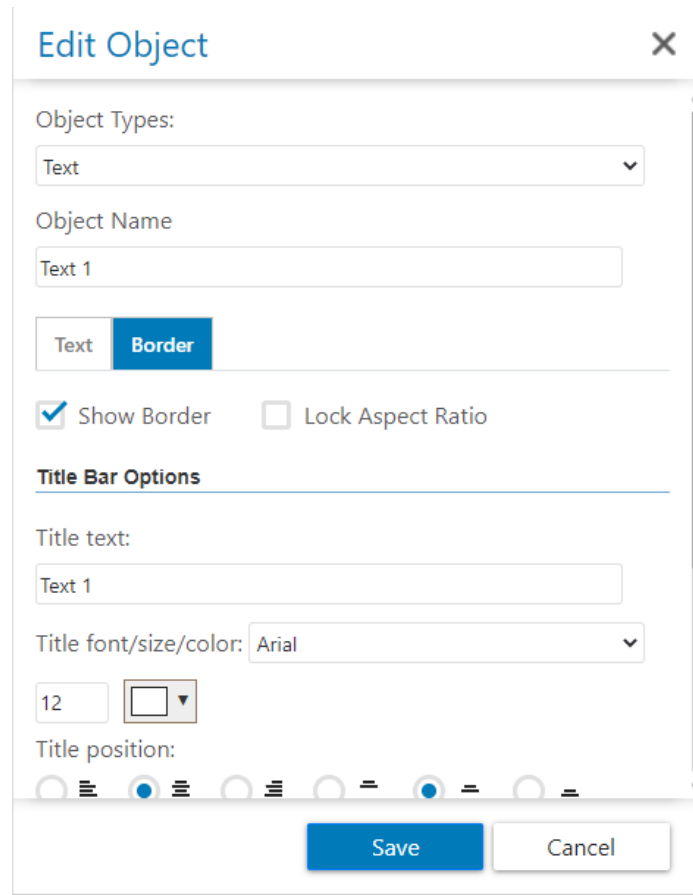
**Figure 8.22 - Text Edit**

1. Type in the **Object Name** and **Text** as shown.
2. Specify the font style and color in the drop down menu.
3. Click on the **Border** tab to set up borders.

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### 8.4.3.1 Text Border

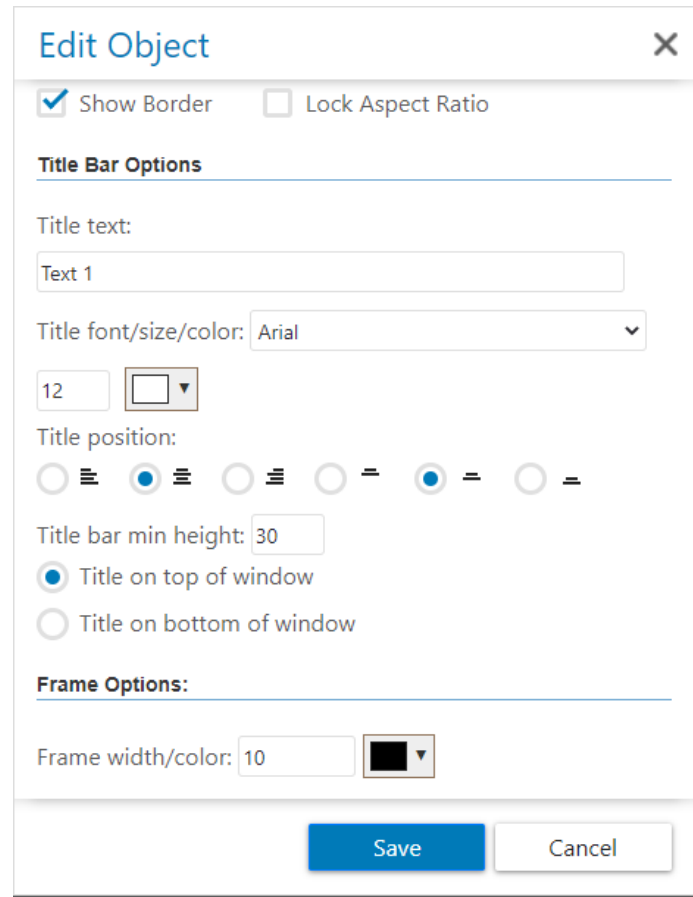


**Figure 8.23 - Text Border**

6. The show Border checkbox can be used to toggle the border
7. The title bar can be configured under title bar options

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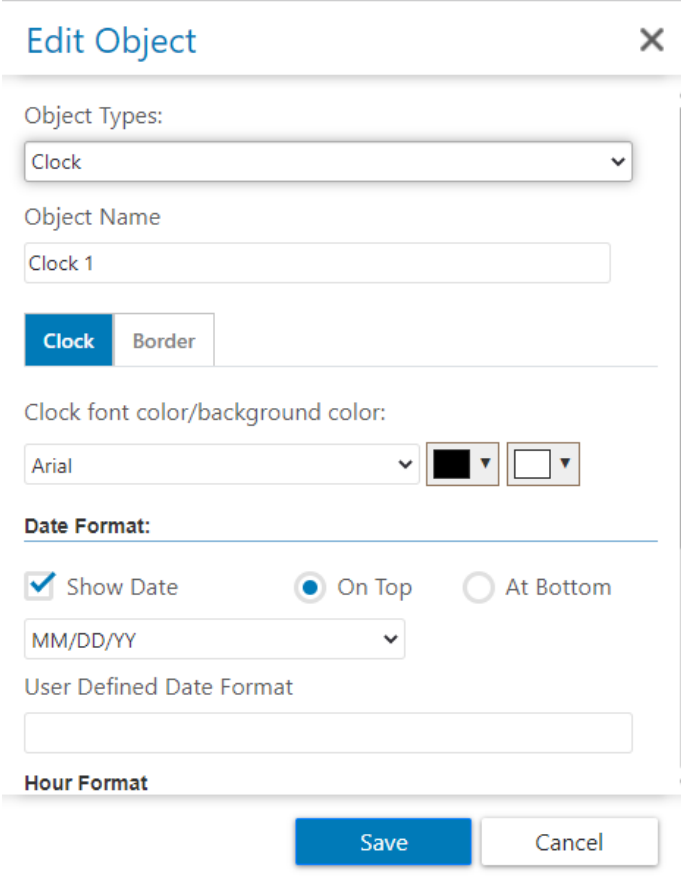
**Figure 8.24 - Text Border**

4. The title can be set in the "Title text" text box.
5. The border "Frame" can be modified under Frame options.

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---

### 8.4.4 Clock Edit



**Edit Object** [X]

Object Types:  
Clock

Object Name  
Clock 1

**Clock** Border

Clock font color/background color:  
Arial [Color Swatch] [Color Swatch]

**Date Format:**

Show Date     On Top     At Bottom

MM/DD/YY

User Defined Date Format

Hour Format

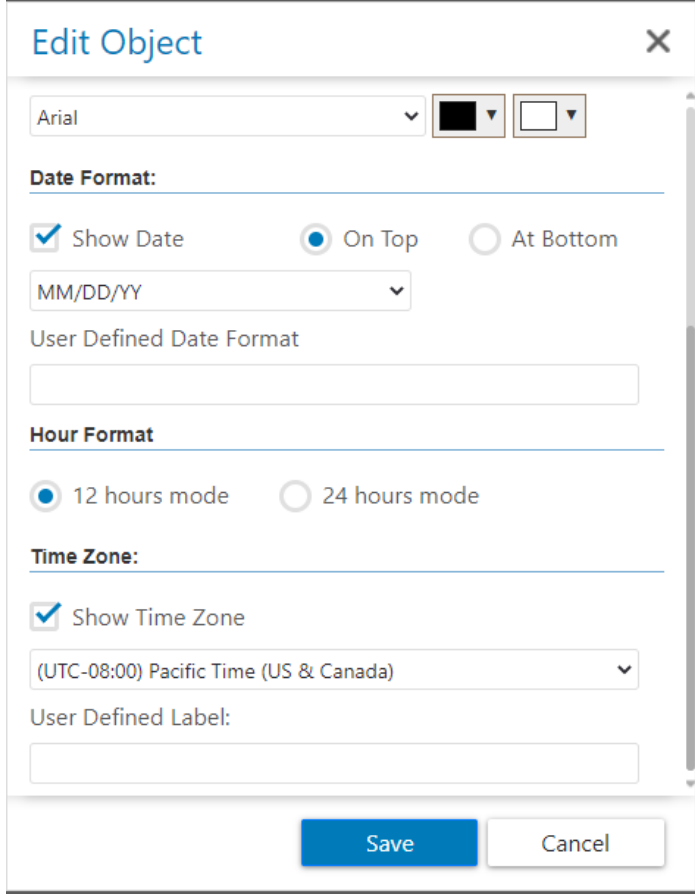
Save Cancel

**Figure 8.25 - Clock Edit**

1. Type the clock name in the **Object Name** field.
2. Select a font from the drop down menu and choose the font color in the left box and the background color in the right box drop down menus.

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---



**Edit Object** [X]

Arial [Color] [Stroke]

**Date Format:**

Show Date     On Top     At Bottom

MM/DD/YY [Dropdown]

User Defined Date Format

[Text Field]

**Hour Format**

12 hours mode     24 hours mode

**Time Zone:**

Show Time Zone

(UTC-08:00) Pacific Time (US & Canada) [Dropdown]

User Defined Label:

[Text Field]

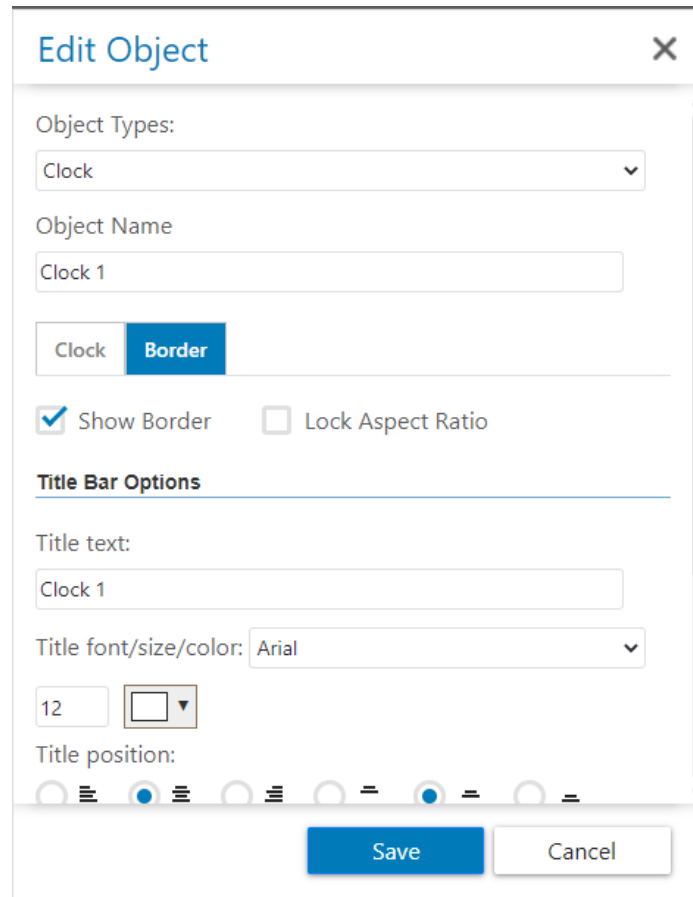
[Save] [Cancel]

**Figure 8.26 - Clock Edit**

3. Check **Show Date** to include the date in the clock window.
4. Select **On Top** or **At Bottom** to position the date in the clock window.
5. Select a date format from the drop down menu or create a new format in the **User Defined Date Format**.  
Example: 'MM' '/' 'DD' '/' 'YY' displays as **06/27/18**.
6. Click on the **Border** tab to set up borders.

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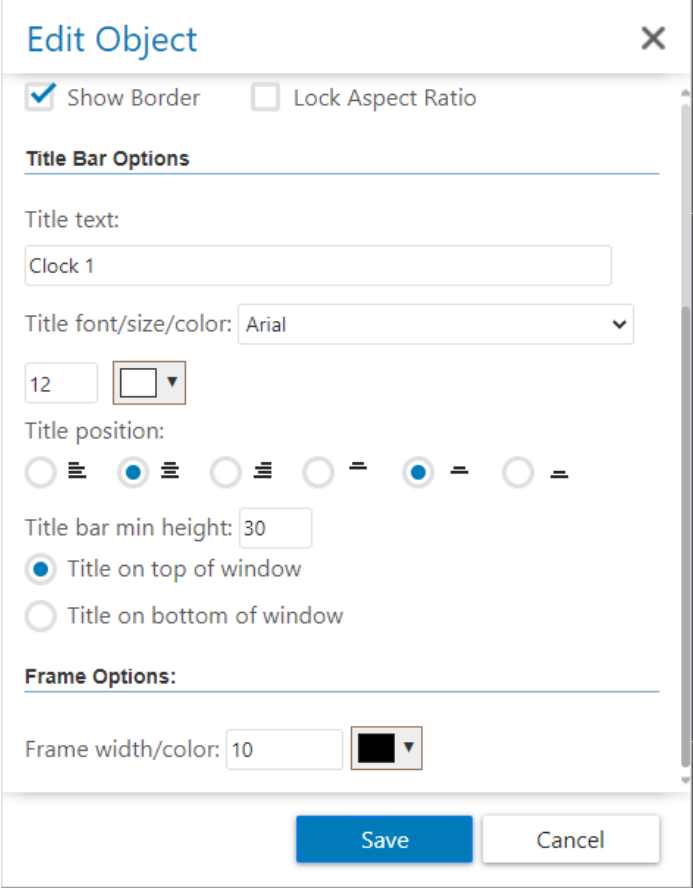


**Figure 8.27 - Clock Border**

7. The border can be toggled with the Show Border checkbox.
8. A title can be added as well, under title bar options.

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**Edit Object** [X]

Show Border     Lock Aspect Ratio

**Title Bar Options**

Title text:  
Clock 1

Title font/size/color: Arial

12 [Color Swatch]

Title position:  
 [Icon]     [Icon]     [Icon]     [Icon]     [Icon]     [Icon]

Title bar min height: 30

Title on top of window  
 Title on bottom of window

**Frame Options:**

Frame width/color: 10 [Color Swatch]

Save    Cancel

**Figure 8.28 - Clock Border Title Bar Options**



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### 8.4.5 Input Edit

#### 1. Object Name

The **Object Name** specifies the name of the input object. The object will be referenced by this name by control systems. The name must be unique for **Named Input** objects and be a valid Windows file name (characters `\*?|<>\ /' are not allowed).

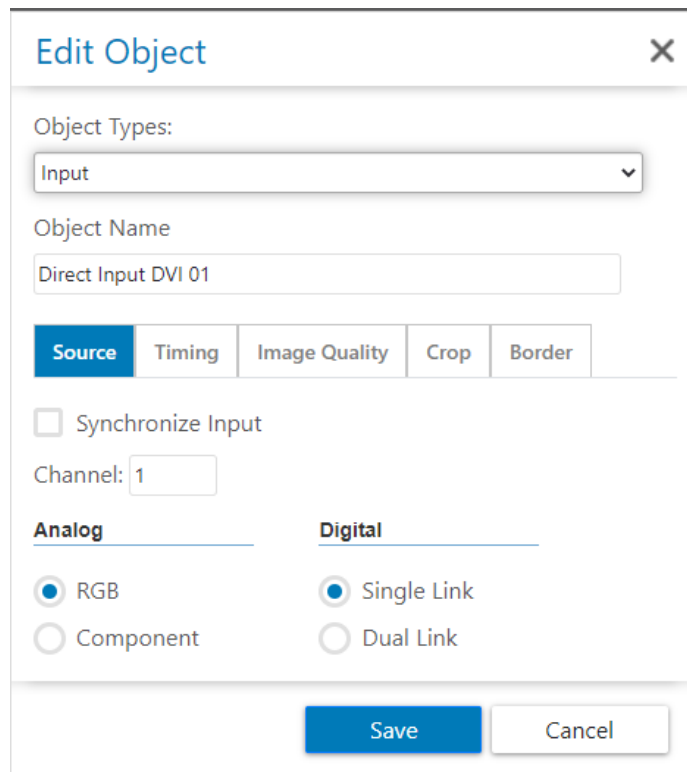
#### 2. Source

On the **Source** tab, type in the **Object Name**, select the **Channel** number, specify **RGB** or **Component**, **Single-Link** or **Dual Link** and click **Save**.

---

**NOTE:** The **4K Input** boards used in the **Catalyst 4K** and **C 1000 Series** do not support component sources.

---



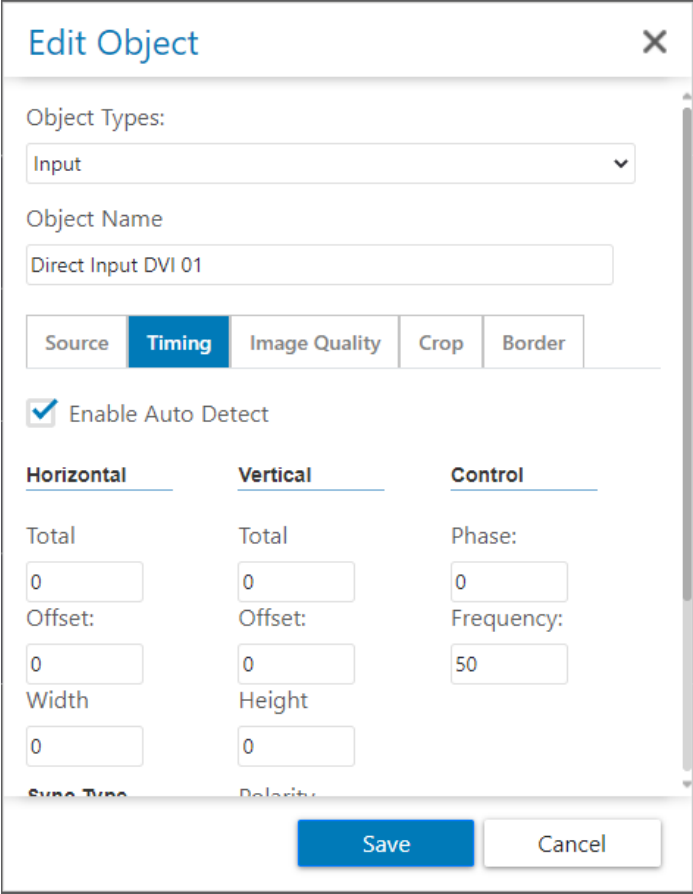
**Figure 8.29 - Input Edit**

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---

### 3. Timing

This page shows the timing detected when a source is connected.



**Edit Object** [X]

Object Types:

Object Name

Source **Timing** Image Quality Crop Border

Enable Auto Detect

Horizontal	Vertical	Control
Total <input type="text" value="0"/>	Total <input type="text" value="0"/>	Phase: <input type="text" value="0"/>
Offset: <input type="text" value="0"/>	Offset: <input type="text" value="0"/>	Frequency: <input type="text" value="50"/>
Width <input type="text" value="0"/>	Height <input type="text" value="0"/>	
Sync Type	Polarity	

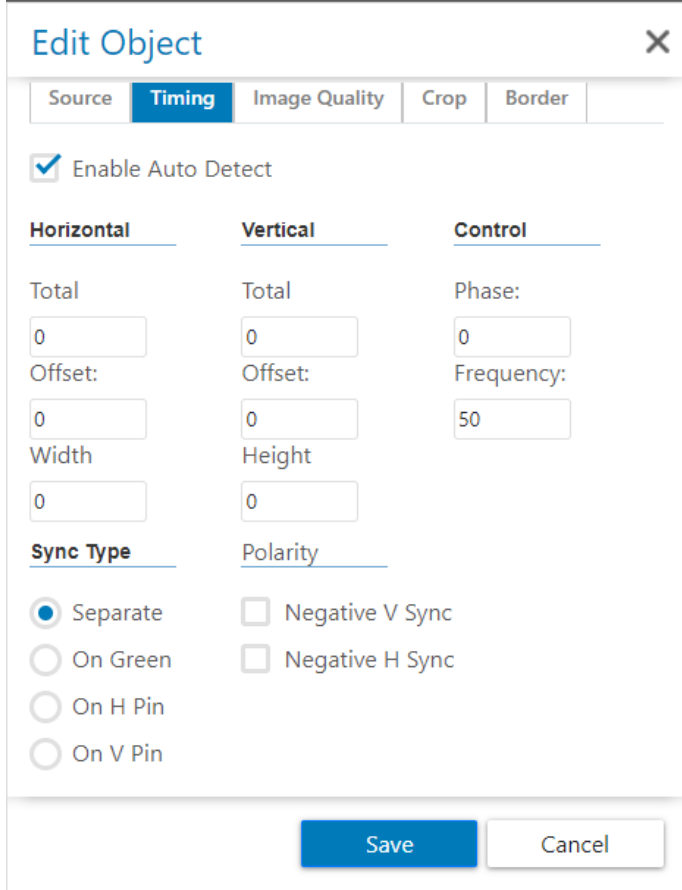
Save Cancel

**Figure 8.30 - Input Timing**

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The **Sync Type** and **Polarity** are set automatically when the **Enable Auto Detect** box is checked (default). If the Enable Auto Detect box is not checked, the timing of analog RGB signals can be adjusted.



Source	Timing	Image Quality	Crop	Border	
<input checked="" type="checkbox"/> Enable Auto Detect					
<b>Horizontal</b>		<b>Vertical</b>		<b>Control</b>	
Total	0	Total	0	Phase:	0
Offset:	0	Offset:	0	Frequency:	50
Width	0	Height	0		
<b>Sync Type</b>		<b>Polarity</b>			
<input checked="" type="radio"/> Separate	<input type="radio"/> On Green	<input type="radio"/> On H Pin	<input type="radio"/> On V Pin	<input type="checkbox"/> Negative V Sync	<input type="checkbox"/> Negative H Sync
Save			Cancel		

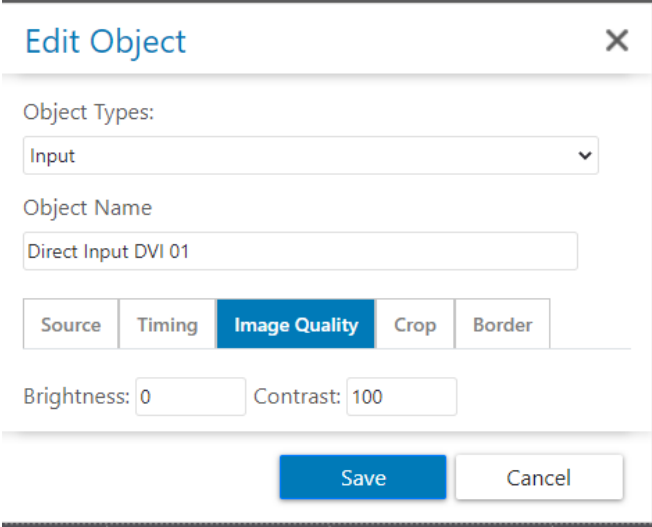
**Figure 8.31 - Input Timing 2**

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### 4. Image Quality

This page allows adjustment of **Brightness** and **Contrast**.



**Edit Object** [X]

Object Types:

Object Name

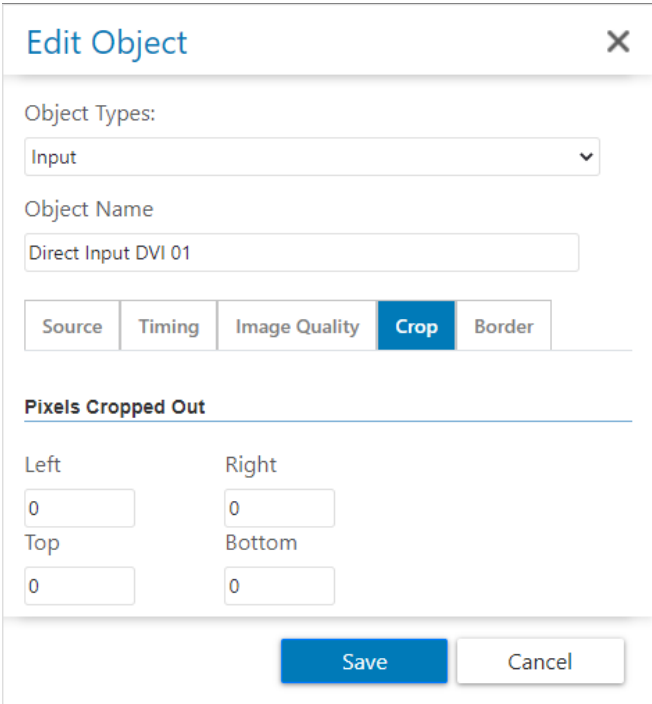
Source | Timing | **Image Quality** | Crop | Border

Brightness:  Contrast:

**Figure 8.32 - Input Image Quality**

### 5. Crop

This page is used for zooming in on an important part of the image. The **Left** and **Top** variables describe the X and Y starting points in pixels, the **Width** and **Height** describe the size of the window.



**Edit Object** [X]

Object Types:

Object Name

Source | Timing | Image Quality | **Crop** | Border

**Pixels Cropped Out**

Left:  Right:   
 Top:  Bottom:

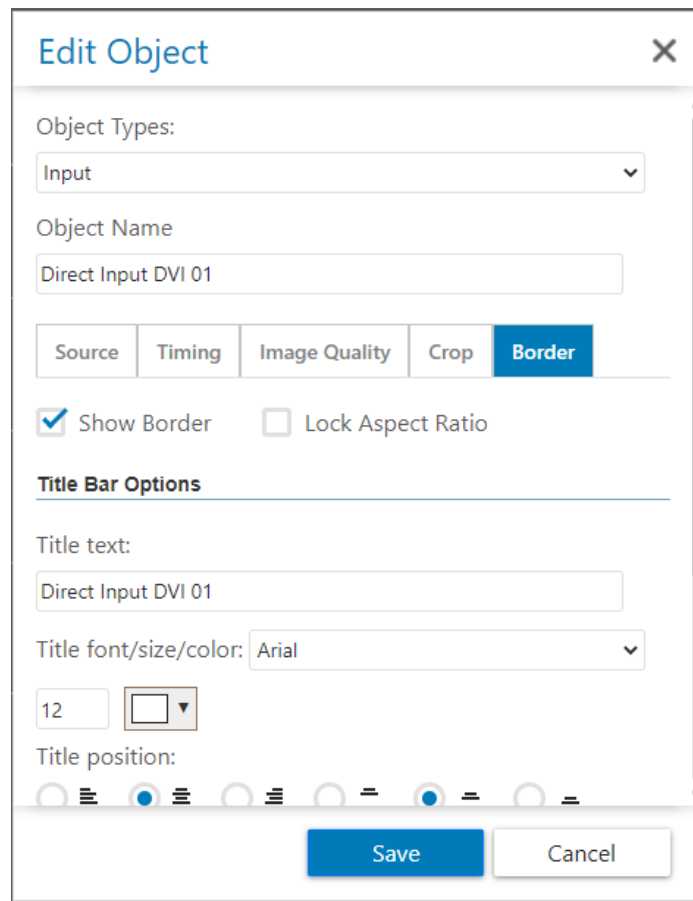
**Figure 8.33 - Input Crop**

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### 6. Border

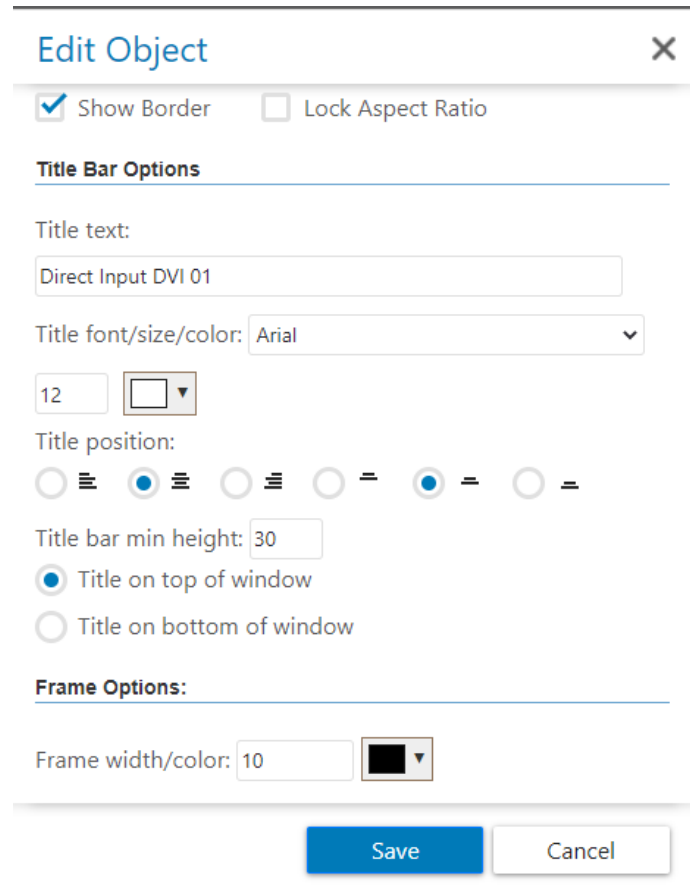
Click on this tab to select **Show Borders** and **Lock Aspect Ratio**.



**Figure 8.34 - Input Border**

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**Figure 8.35 - Input Border 2**

### **Named Input Templates**

A Named Input Template provides the ability to predefine a set of window properties to be applied to a source window.

A window is defined by its properties. A **Named Input Template** has a set of specifically adjusted properties. When the **Named Input** is called, those properties now replace the properties previously defining the window. The window is now defined by the properties in the **Named Input**.

Use a **Named Input Template** under the following conditions:

- To set special properties for a specific (Named) Direct input source – usually due to needed adjustments – any property
- To make specific adjustments for a group of sources

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- To set **Window Properties** without using a layout.
- To set **Window Properties** from a touch panel (may require two outputs—one to Fusion System and one to Matrix Switch).
- To open Direct Input windows very quickly without AutoDetect (analyzing the signal takes several seconds) —Named Input is "immediate".

The **Timing, Image Quality, Crop, and Border** of a **Named Input Template** may be applied to any **Direct Input** source. **Named Inputs** can be used to set only the **Properties** seen in the **Named Input** tab.

Note that **Size and Position** and **Frame and Title** are not part of the Named Input's Properties. These are part of the properties for the window into which the **Named Input** will load. The window will either have already been open manually or be part of a layout where the **Named Input** is applied.

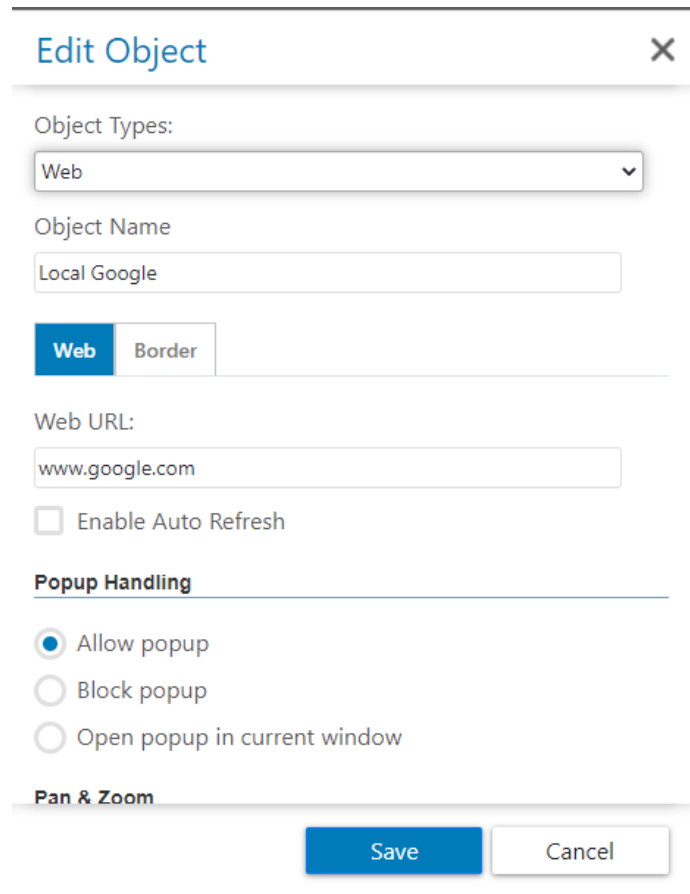
To create and apply a **Named Input Template**:

- a. Open an **Input Source** object, name it, set the properties and assign **Channel 0** and **Save**. See [Figure 8.29 - Input Edit](#) (Channel 0 may only be selected on this page.)
- b. Open the target **Input Source** and select it on the **Mimic** wall.
- c. Go on **Menu > Local Source** & select an Input **Source** from the list.
- d. Click on the **Settings** icon, change the **Channel** to **0** and **Save**.

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### 8.4.6 Web Edit



The screenshot shows a dialog box titled "Edit Object" with a close button (X) in the top right corner. The dialog is organized into several sections:

- Object Types:** A dropdown menu currently showing "Web".
- Object Name:** A text input field containing "Local Google".
- Style Selection:** Two buttons, "Web" (which is highlighted in blue) and "Border".
- Web URL:** A text input field containing "www.google.com".
- Enable Auto Refresh:** A checkbox that is currently unchecked.
- Popup Handling:** A section with a horizontal line above it, containing three radio button options:
  - Allow popup
  - Block popup
  - Open popup in current window
- Pan & Zoom:** A section with a horizontal line above it, which is currently empty.

At the bottom of the dialog, there are two buttons: "Save" (highlighted in blue) and "Cancel".

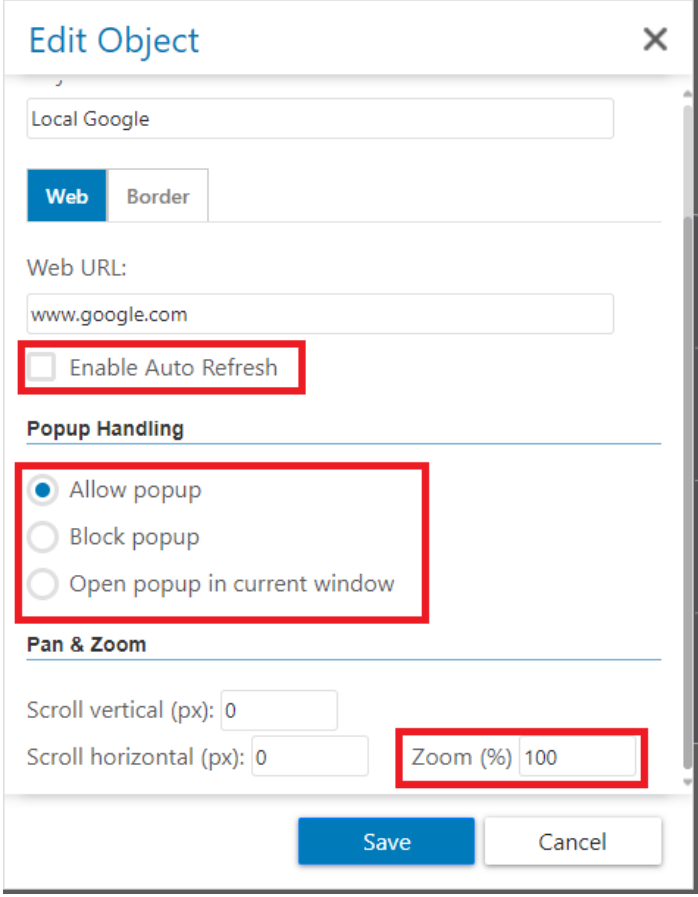
**Figure 8.36 - Web Edit**



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1. Type in the **Object Name** and **URL Path**.



**Edit Object** [X]

Local Google

**Web** Border

Web URL:  
www.google.com

Enable Auto Refresh

**Popup Handling**

Allow popup  
 Block popup  
 Open popup in current window

**Pan & Zoom**

Scroll vertical (px): 0  
Scroll horizontal (px): 0  
Zoom (%) 100

Save Cancel

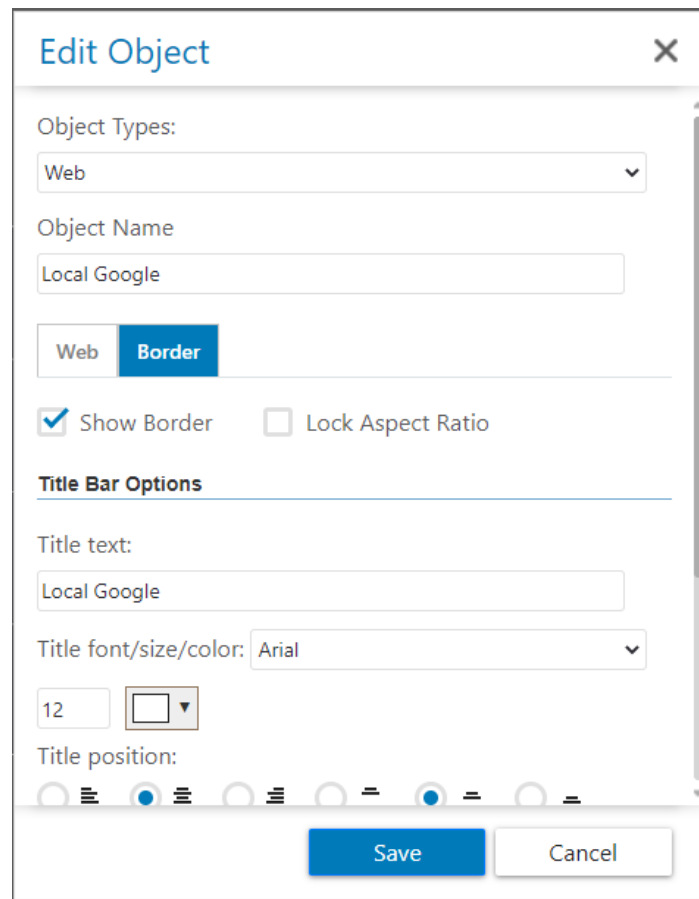
**Figure 8.37 - Web Edit 2**

2. Check **Enable Auto Refresh** if the web site is dynamic.
3. If Popups are **Allowed** for web site logins, some may require opening the **current window**.

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4. To open a web site on a specific area, specify the zoom **vertical** and **horizontal** pixel offset and **Zoom %**.

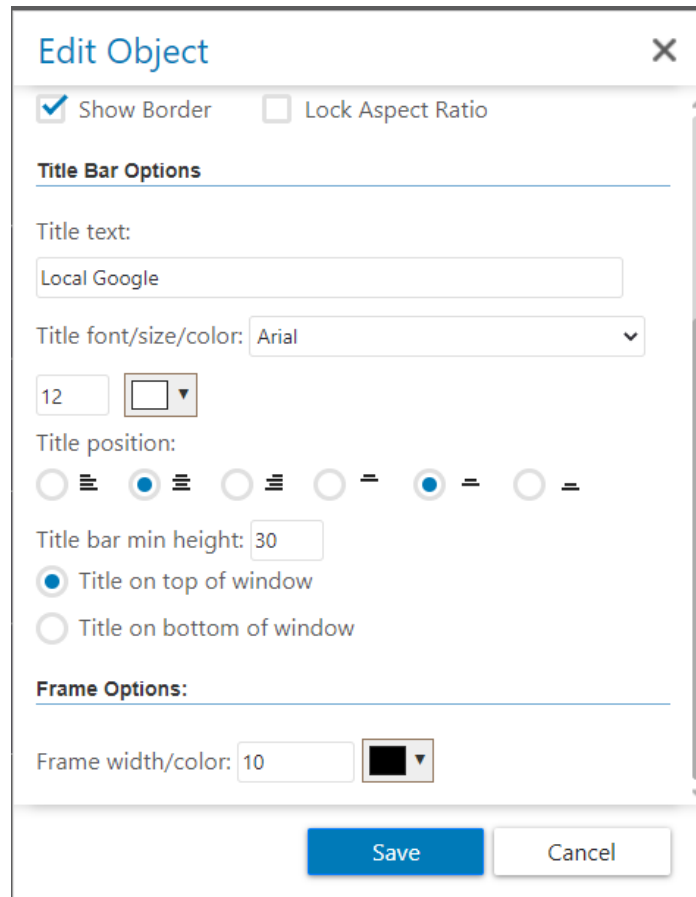


**Figure 8.38 - Web Edit Border**

5. Under the border tab a border can be set.

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**Figure 8.39 - Web Edit Customize Border**

6. The border's title, position, height, and frame can be customized.

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### 8.5 Borders

#### 8.5.1 Using Show Border

1. Select **Mimic—>Menu—>Show Border**
2. This action highlights a Window.
3. **Show Border** creates a title bar and frame around the selected Window.

#### 8.5.2 Using Hide Border

1. Select **Mimic—>Menu—>Hide Border**
2. This action highlights a window.
3. **Hide Border** will hide the title bar and frame.

### 8.6 Closing Mimic Windows

#### 8.6.1 Close

Closes the selected window.

#### 8.6.2 Close All

Closes all of the windows on the Mimic.

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### 8.7 Mimic Layouts

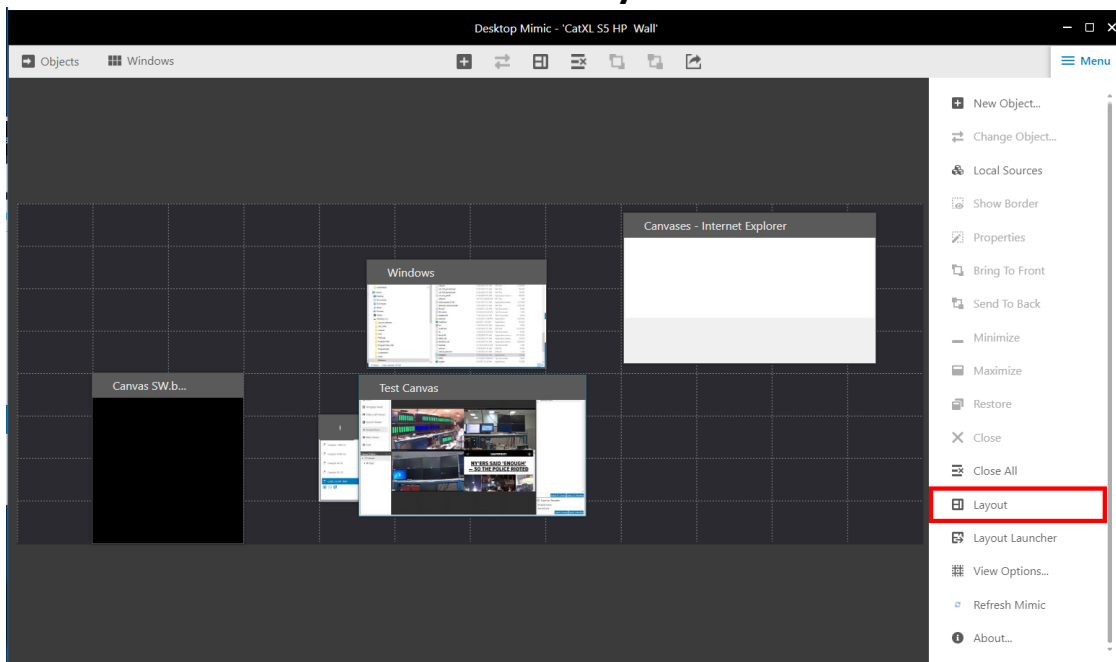
#### 8.7.1 Layout Creation and Deletion

Users can save the current Canvas and Source Window arrangement as a **Layout** for future access and use. Once saved, a **Layout** can be overridden, deleted, or renamed.

See [Section 8.7.6 Layouts in the Administration UI](#).

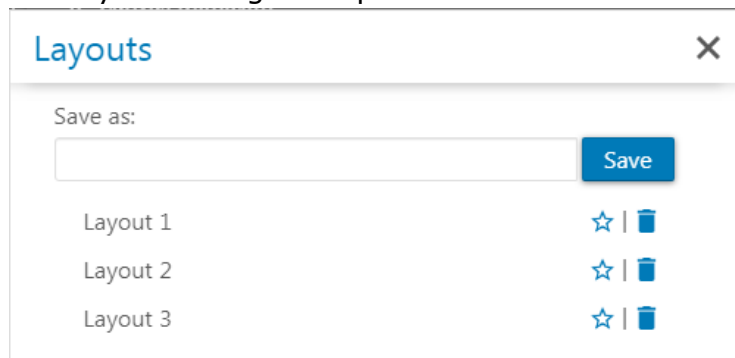
#### 8.7.2 Save a Layout

1. Select **Mimic—>Menu—>Layout...**



**Figure 8.40 - Save Layout**

2. The Layout Dialog box opens:



**Figure 8.41 - Save As Layout**

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3. Type a name in the **Save As** field of the **Save Layout** dialog. Click **Save** to save the current arrangement of Canvas windows on the desktop to a layout object.

### 8.7.3 Choose a Layout

1. Select **Mimic—>Menu—>Layout...**
2. Select a previously loaded Layout from the list in the **Layouts** dialog that appears. All applicable Layout objects for the selection will appear in a list as shown in [Section 8.19 Image Edit](#).
3. Double-click the list item or Click **Apply** to load the selected Layout.

### 8.7.4 Delete a Layout

1. Select **Mimic—>Menu—>Layout...**
2. Select a previously loaded Layout from the **Layouts** list.
3. Click on the **Trash Can** at the right shown in the figure below.

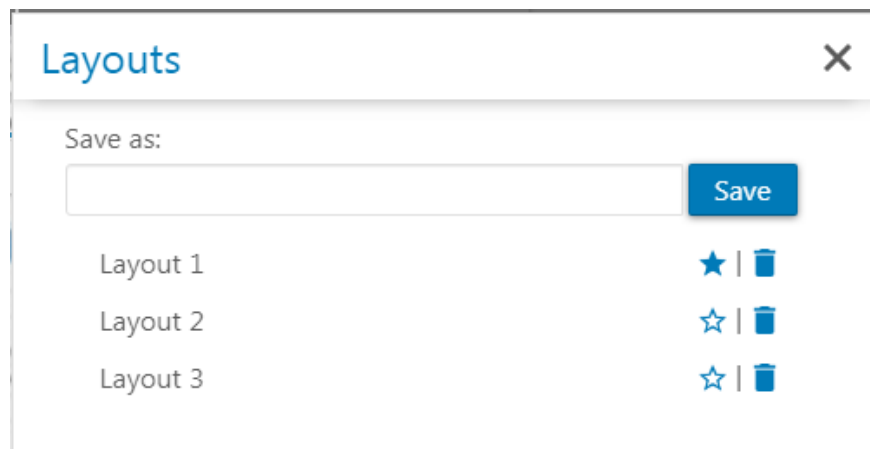


Figure 8.42 - Select Default Layout

### 8.7.5 Default Layout

The **Default Layout** is opened in the Mimic when the Client system is rebooted. Designate a layout as the default by clicking the star at the right of the listing. The star for **Default Layout** shows blue as shown in [Figure 8.35 - Input Border 2](#).

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### 8.7.6 Layouts in the Administration UI

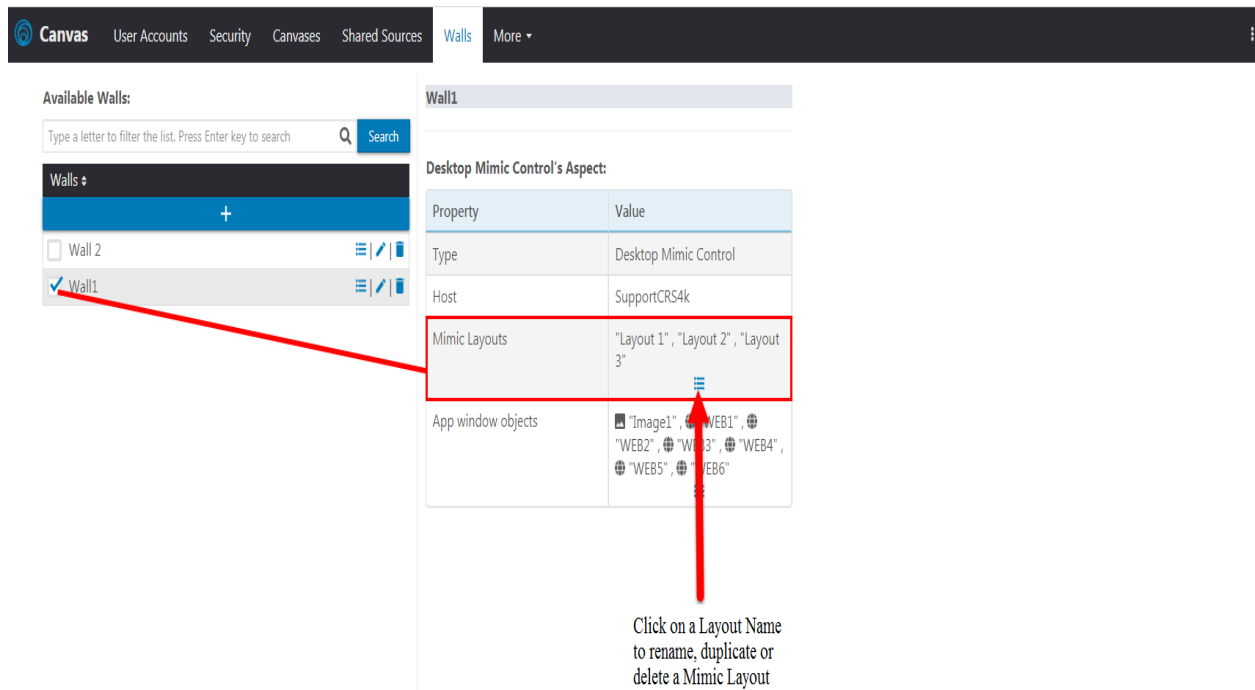
Layouts are associated only with the desktop being controlled through the Mimic. This association is established when a Layout object is saved by the user. Layouts store the state/position of **Canvases**, **Sources** and **Mimic Objects**.

Layouts can be created and deleted by users, but can be renamed only in the Administration UI.

**Note:** Layouts are not transferable between different walls.

Click on the Wall on the left and view the Mimic Control Aspect on the right. Any user with access to Mimic Control on a given desktop can apply any layout saved for that desktop.

To open the Layout Launcher Click on the Layout Launcher URL.



Available Walls:

Type a letter to filter the list. Press Enter key to search

Walls +

- Wall 2
- Wall 1

Wall1

Desktop Mimic Control's Aspect:

Property	Value
Type	Desktop Mimic Control
Host	SupportCRS4k
Mimic Layouts	"Layout 1", "Layout 2", "Layout 3"
App window objects	"Image1", "WEB1", "WEB2", "WEB3", "WEB4", "WEB5", "WEB6"

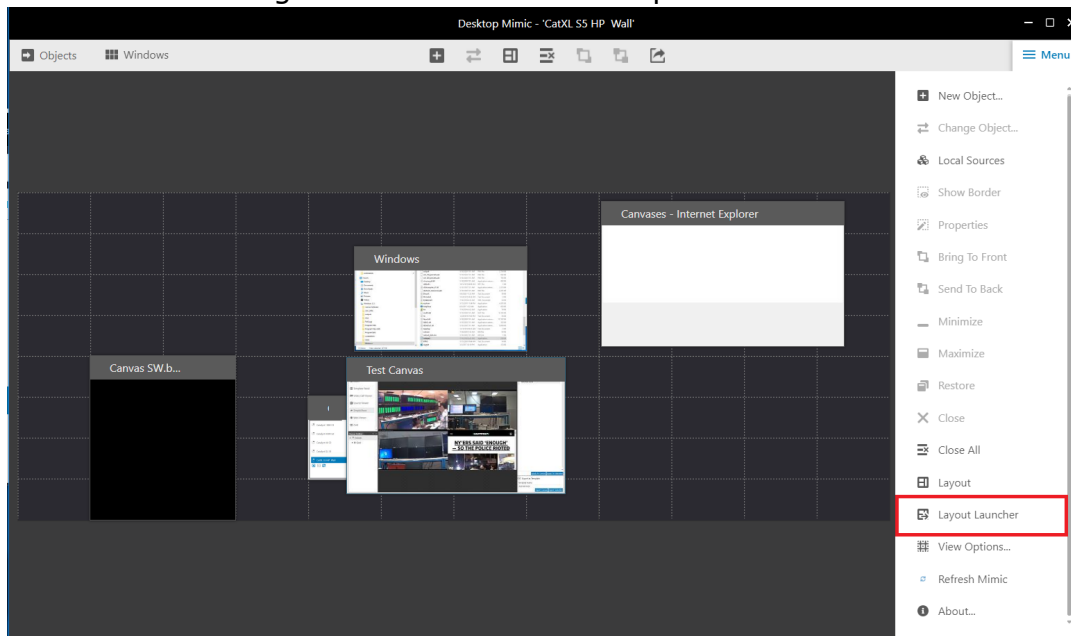
Click on a Layout Name to rename, duplicate or delete a Mimic Layout

**Figure 8.43 - Layout Access**

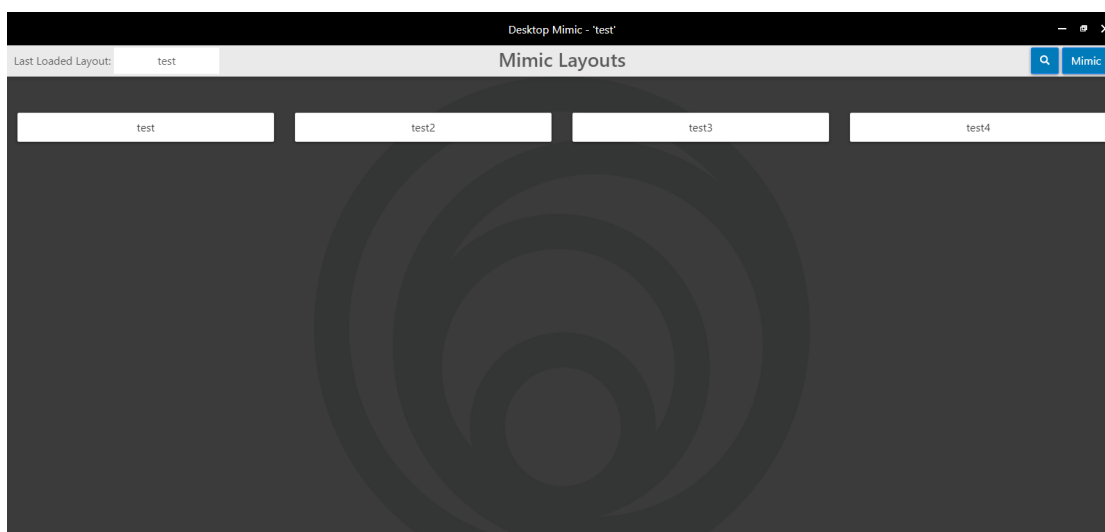
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### 8.7.7 Layout Launcher

Clicking on the Layout Launcher menu item opens the "Layout Launcher" Page. This page is a button view of all the layouts saved for a wall. Clicking on one of the layout buttons will apply the selected layout. On the top left it display the "Last Loaded layout" and on the top right is the "Mimic" button. Clicking on the "Mimic" button opens the "Mimic" for the Wall..



**Figure 8.44 - Layout Launcher**



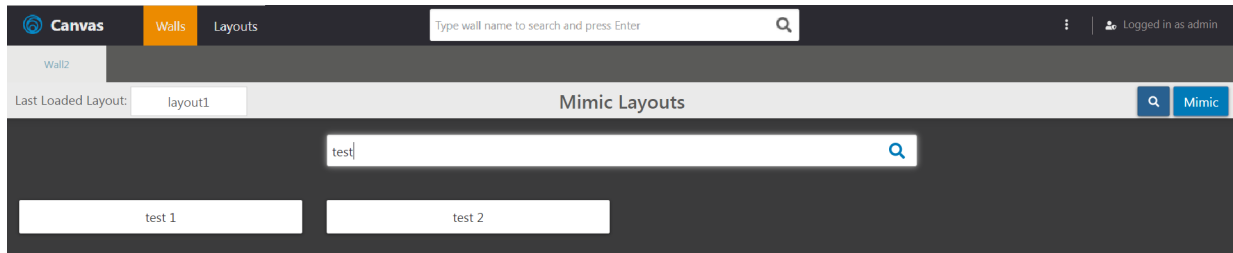
**Figure 8.45 - Layout Launcher Page**



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The layout launcher has a search bar that can be toggled by clicking the search icon in the upper right corner of the screen.



**Figure 8.46 - Layout Launcher Search Bar**

+/- prefixes can be used to include or exclude items. The + prefix is included by default.

### 8.7.7.1 Layout Launcher Background Image

Users can change the background image of the layout launcher. To change the background image follow the steps below:

4. Take the image and rename it to "layout-launcher-background"
5. Go to  
ProgramFiles\Canvas\Client\Content\Mimic\Content\images\icons-new-ui-theme
6. There is already a file name "layout-launcher-background". Users can make a copy and save it.
7. Then they can move/copy the file they created in step 1 to that directory in step 2
8. For the Web Client Layout Launcher:

repeat the same steps for the file, but with the following path  
ProgramFiles\Canvas\Server\WebServices\Content\Mimic\Content\images\icons-new-ui-theme

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### 8.7.8 Layout Page Configuration using URL Params

There are some URL params that can be passed to Layout Page URLs that can be used to pre-configure filters and other page behavior.

These params apply to Layout pages for individual walls like Popout URLs and accessing mimic by ports, e.g. URLs like:

- \*: <Server>/Canvas/Layouts/<WallName>
- \*: http://<WallHost>:8080/mimic
- \*: https://<WallHost>:8043/mimic

---

Note: These params don't apply to the Layout Launcher which manages multiple Walls.

---

Multiple params can be passed at once using the form:

- <Server>/Canvas/Layouts/<WallName>?<param1>=value1&<param2>=value2

#### 8.7.8.1 showSearch

showSearch=true: Show the Layout Filter/Search Input Field

showSearch=false: Do not show the Layout Filter/Search Input Field

#### 8.7.8.2 showMimic

showMimic=true: Always show "mimic" button so can easily navigate to Mimic page from Layout page (default is true)

showMimic=false: Do not show Mimic button on page

#### 8.7.8.3 filter & isInclusion

These 2 fields are used together, either one without the other will be ignored.

filter=<value>: The text to filter/search on

isInclusion=true: Show all layouts that begin with the filter <value>.

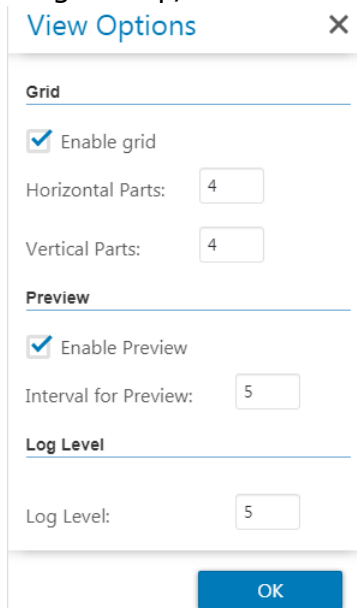
isInclusion=false: Show all layouts that do not begin with the filter <value>.

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### 8.8 View Options

1. Select **Mimic—>Menu—>View Options**
2. Click the **Enable grid** box and enter the **Horizontal** and **Vertical Parts** or select using the up/down arrow keys that appear.



**Figure 8.47 - Mimic Grid Options**

3. The grid will appear as dotted lines on the Mimic.
4. Windows will snap to the Grid vertexes.

#### 8.8.1 Preview

1. Click enable preview to turn on previews of objects in the left most panel and windows that are currently open on the Wall.
2. Enter (in seconds) the interval for preview. This decides how often previews are refreshed.

---

**Note** The "enable preview" option must be enabled to for previews. This can be configured in the Administration UI. Refer to [Section 6.6.4 Adding Permissions to a Canvas, Source, or Wall](#)

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### 8.9 Refresh Mimic

The **Refresh Mimic** reloads the current mimic. It also resends updates to remotely controlled (non-local) systems.

If another user added new objects to the Mimic while it was actively being used by a separate user, these additional objects will appear when you refresh the Mimic.

- Select **Menu—>Refresh Mimic**



**Figure 8.48 - Refresh Mimic**

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### 8.10 Remote Cursor

Remote Cursor is a functionality that allows remote mouse cursor and keyboard control of your display wall from the Canvas Virtual Screen Client application running on a PC. Remote Cursor gives you the ability to control your graphics display from a remote location. Remote Cursor will allow you to use your local (remote Windows system) mouse and keyboard to remotely control the display as if they were the keyboard and mouse of the display Wall Controller itself. Remote Cursor will also allow you to remotely login to your Wall Controller.

Upon activation of the Remote Cursor, you will have full keyboard operation as well as full mouse control of the controlled (server) system. All normal keyboard combinations are operational with the exception of the Windows keys see [Section 8.10.2 Remote Cursor Features and Limitations](#) on page 299. You will have use of both mouse buttons as well as the mouse wheel if you have a mouse with wheel installed on the server system.

#### 8.10.1 Remote Cursor Operation

There are three ways to activate Remote Cursor:

- **Canvas Client**,
- **Hot Keys**, or
- **Command Line**

To activate from the Canvas Client refer to [Section 7.1.1 Canvas Panel Icons](#) on page 207.

To activate Remote Cursor by hotkeys, the Remote Cursor Client or Canvas Virtual Screen Client must be running. There are two hot-key combinations that are reserved for Remote Cursor:

- **Ctrl+Alt+C – Remote Cursor** will exit
- **Ctrl+Alt+Backspace** – emulates **Ctrl+Alt+Del** on the display wall controller while Remote Cursor is running.
- Remote Cursor can also be activated by issuing the command line in the Command Prompt window. Open a Command Prompt window, type the following command line to activate the Remote Cursor:
  - **SynRCClient Server\_name User\_name Password**
  - **Server\_name** is the name or IP address of the server located on a separate machine.

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- **User\_name** is the authorized user name on that server.
- **Password** is a field that is not presently supported.

If the Password is missing, Remote Cursor will try to connect to the server without it.

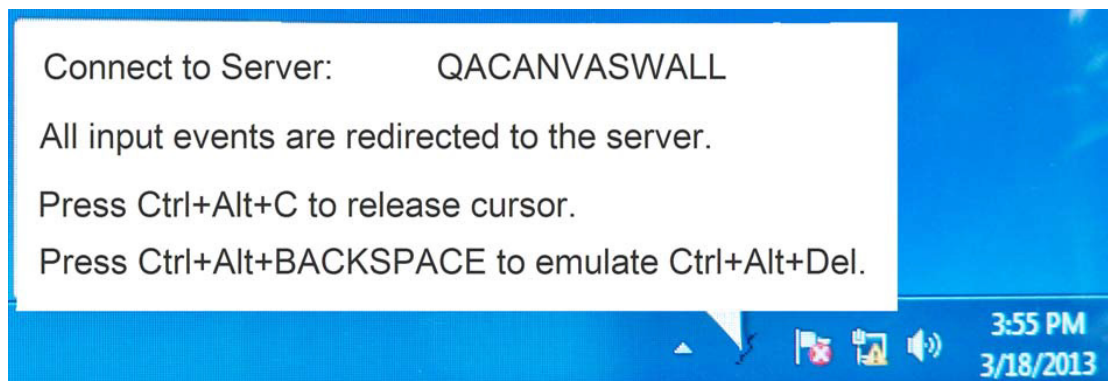
If either the **Server\_name** or the **User\_name** is missing, Remote Cursor will not try to establish a connection; instead, it prompts the user for necessary information. With the Remote Cursor function activated, all mouse movements and keyboard strokes will be forwarded and executed on the display wall controller that Canvas Virtual Screen is connected.

To stop Remote Cursor, press **Ctrl+Alt+C**. The same hot-key combination is used to toggle Remote Cursor on and off without the need to active it from the menu item. You can use the **Ctrl+Alt+C** key combination at any time to switch (back and forth) between the controlling computer and controlling the server system.

To release the cursor, press the hot keys described on the Remote Cursor Message Dialog ([Section 8.49 Remote Cursor Message Dialog](#) on page 298). The same hot-keys are used to toggle Remote Cursor on and off without the need to active it from the menu item.

There is a hot-key combination that emulates **Ctrl+Alt+Del** on the display wall controller while Remote Cursor is running. It is also described on the Message Dialog.

After the cursor is released, Remote Cursor will not terminate, it remains in stand-by mode. To close the Remote Cursor, open the Remote Cursor Context menu (described in the next section) and select the Close menu item.



**Figure 8.49 - Remote Cursor Message Dialog**

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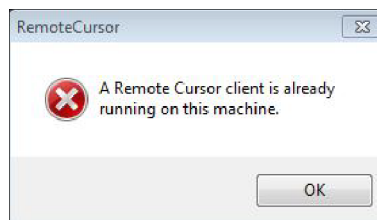
---

In standalone mode, Remote Cursor will show an icon on the Task Bar as shown below.



**Figure 8.50 - Remote Cursor Icon**

When a new Remote Cursor session is attempted, the following dialog box appears:



**Figure 8.51 - Warning Message**

### 8.10.2 Remote Cursor Features and Limitations

- A client can connect to only one server at a time.
- A server can only be activated by only one client.
- Both server and client mice and keyboards can be used at the same time, though this is not generally recommended. This is only to note that the server mouse and keyboard are not locked out when a remote client is connected and Active.
- Pressing the **Windows** key on the client keyboard will return temporary control to the client system. You can also use other Windows HotKeys to return temporary control to the client system. Clicking on the Remote Cursor window with the mouse cursor will return control to the Wall Controller.
- You may use the network **name** of a server or its IP address to connect to that server.
- When operational, the cursor will disappear from the client screen until toggled again with the **Ctrl+Alt+C** key combination or temporary control is returned with the use of the **Windows** key (or other Windows HotKeys).
- When emulating Ctrl+Alt+Del on the display wall controller, UAC must be enabled (i.e. set as **On**) on the wall controller.



**Jupiter**



# Chapter 9—Jupiter Mobile Server

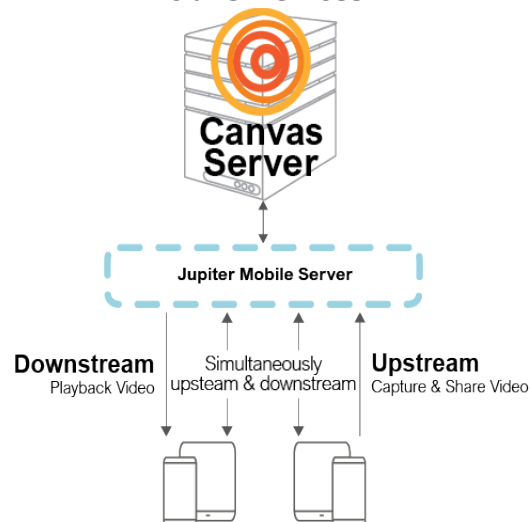
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## 9. Jupiter Mobile Server

### 9.1 Jupiter Mobile Server

For Canvas Mobile the Jupiter Mobile Server (JMS) must be installed *and* configured. The JMS provides the connections and translations between Canvas Server and mobile clients. This section describes the configuration options for JMS, but also has some information additional JMS installation information found in [Section 4.2.3 Types of Canvas Installations on page 15](#).

**Figure 9.1 - Jupiter Mobile Server Handles Downstream To and Upstream From Mobile Devices**



## 9—Jupiter Mobile Server

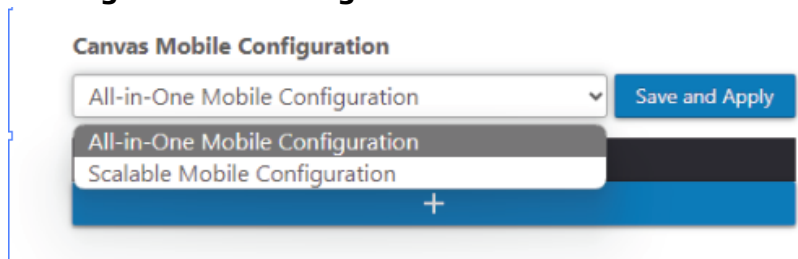
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### 9.1.1 Scalable Mobile Infrastructure or All-in-One JMS

There are two basic types of the Jupiter Mobile Server — All-in-One and Scalable. All-in-One puts a server on a device and that device provides for all upstream and downstream traffic to mobile clients. All-in-One is not scalable for a large number of mobile clients and is normally intended for demonstrations and testing. See [Figure 9.3 Jupiter Mobile Server Common Architectures on page 303](#).

The Scalable mobile configuration uses multiple components so throughput traffic for multiple streams is distributed which provides for much greater scalability. See [Figure 9.4 Scalable Jupiter Mobile Infrastructure on page 303](#).

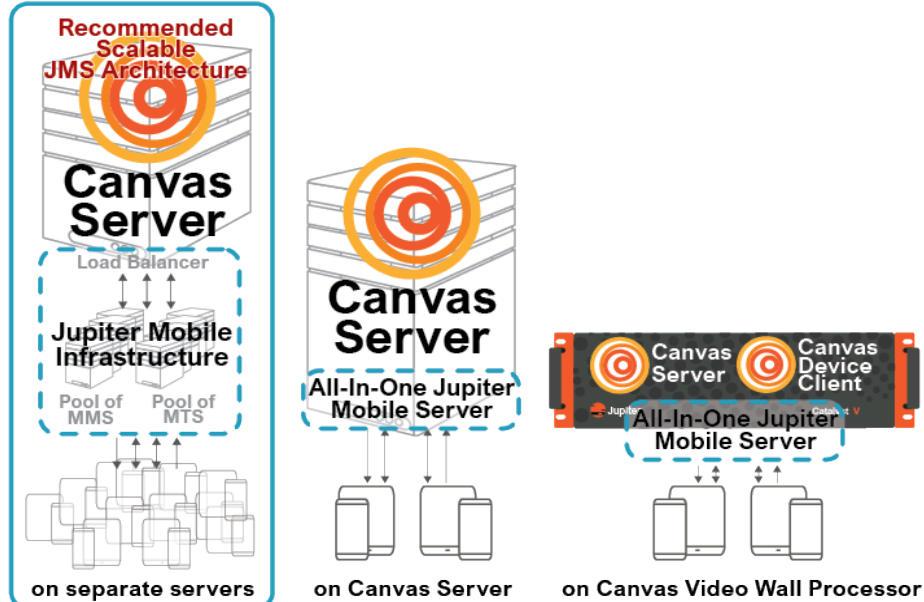
**Figure 9.2 - Configure All-in-One or Scalable**



From the most common Jupiter Mobile Server architectures, the recommended solution is the scalable architecture. The recommended scalable JMS architecture has the Load Balancer on the same physical server as the Canvas Server and the other components are on separate servers.

## 9—Jupiter Mobile Server

**Figure 9.3 - Jupiter Mobile Server Common Architectures**

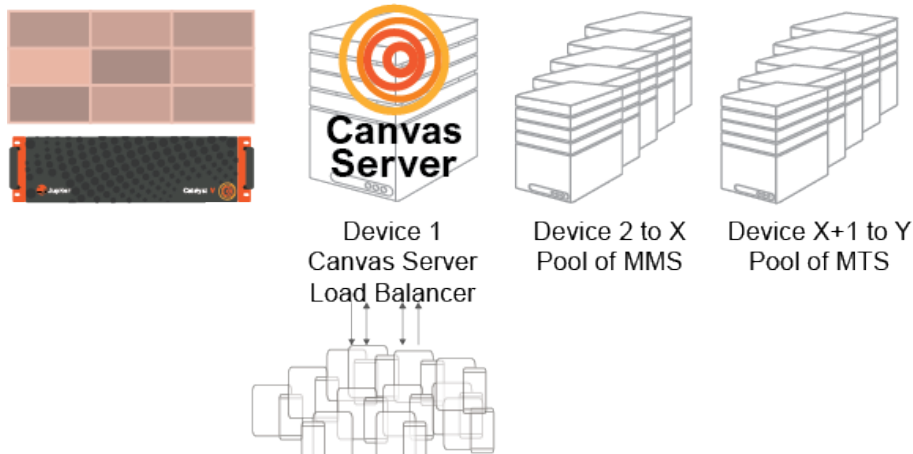


### 9.1.1.1 Scalable Jupiter Mobile Infrastructure

The scalable Jupiter Mobile Infrastructure has three distinct component types — Load Balancer, Mobile Media Server Pool, and Media Transcoding Server Pool. The Load Balancer is the scheduler and traffic controller of the system. It determines which of the pool of Mobile Media Servers (MMS) and which of the pool of Media Transcoding Servers (MTS) are used to send or receive or transcode streams to or from the mobile devices.

The Mobile Media Servers receive incoming streams; the Media Transcoding Server converts video formats as necessary.

**Figure 9.4 - Scalable Jupiter Mobile Infrastructure**



## 9—Jupiter Mobile Server

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The number of MMS and physical servers depends on the number of streams which need to be provisioned. This number is not depended on the number of mobile clients, but the number of mobile clients needing simultaneous streams. If your organization has 5000 mobile clients, but only 10% may need simultaneous service, then 500 simultaneous streams would be the information to use to determine how many MMS to install.

The number of MTS and physical servers depends on how many external IP streams need to be transcoded to deliver simultaneously. Note that not all streams will need transcoding. For example a source which is providing MJPEG from an older IP camera will require transcoding, however new video compression standards such as H.264 may not.

The Mobile Load Balancer monitors the performance of the servers and balances the processing and throughput as necessary.

---

**NOTE:** Devices with Load Balancer and MMS must use fully qualified domain names and have HTTPS Security. For information about configuring HTTPS Security, see [Section 4.13 HTTPS Security on page 45](#).

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## 9—Jupiter Mobile Server

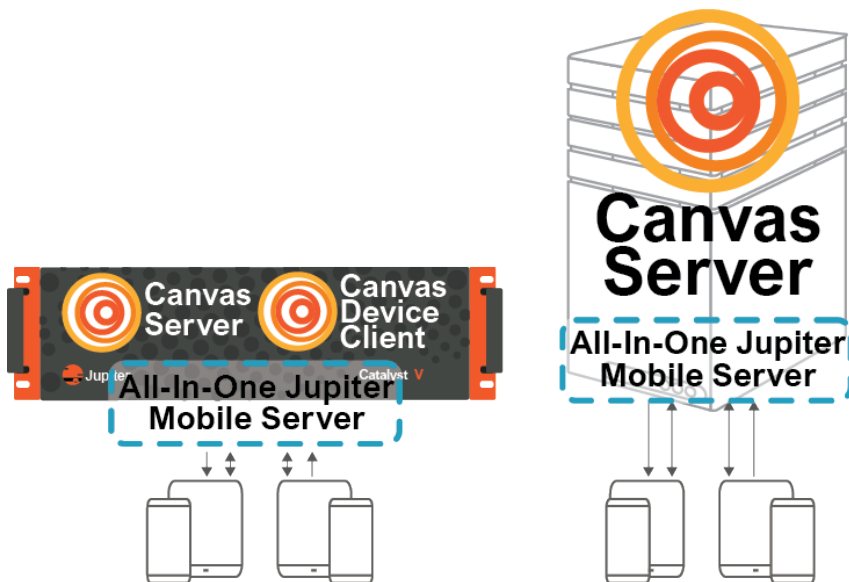
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### 9.1.1.2 All-In-One Jupiter Mobile Server

All-in-One mobile servers are installed by default on Canvas Devices such as the Catalyst and CRS-5K. The Canvas Devices are primarily graphics processors, rather than built for traffic handling.

All-in-One Mobile Servers are generally for demonstration purposes or very small groups, not large production configurations.

**Figure 9.5 - All-in-One Mobile Server for Demonstration Purposes**



All-in-One may be installed on the same server which Canvas Server resides or may be installed on a separate device.

## 9—Jupiter Mobile Server

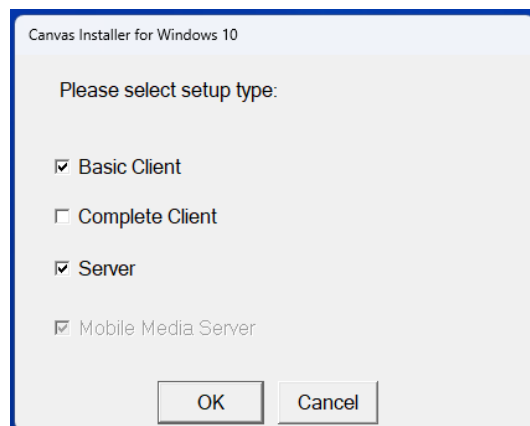
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### 9.9.6 Installation and Configuration

There are two parts to creating a Jupiter Mobile Server — installing the yet to be defined Mobile Infrastructure Node on the server where it is to reside **and** configuring it as a component of the scalable Jupiter Mobile Infrastructure (or as an All-in-One server).

For Canvas Sever installations the **Mobile Infrastructure Node** (MIN) is installed when the Canvas Server is installed. You can see that when the **Server** box is checked, the **Mobile Infrastructure Node** is also checked. Since the MIN is not configured on installation, it will be configured later from the Administration UI, however to help plan installations and configurations some information is necessary.

**Figure 9.7 - Canvas Installer with Basic Client, Server, and Mobile Media Server Selected**



On the device with the Canvas Server the MIN will be configured as the one Load Balancer or as the All-In-One Jupiter Mobile Server which would be the only component for the Canvas Server. For the scalable Jupiter Mobile Infrastructure you would then install and configure MIN on different separate servers.

---

**Note:** The **Canvas Installer** not only installs the component selected; it removes the other components. So if you have Canvas Server on a device and you select only **Mobile Infrastructure Node** in the installer it will remove the Canvas Server and install the Mobile Infrastructure Node.

---

The Jupiter Mobile architectures shown in [Figure 9.3 Jupiter Mobile Server Common Architectures on page 303](#) are described in [Table 9.1 Jupiter Mobile Infrastructure Installer and Configuration Matrix on page 307](#).

## 9—Jupiter Mobile Server

**Table 9.1: Jupiter Mobile Infrastructure Installer and Configuration Matrix**

	Device 1	Device 2 to X	Device X+1 to Y	
<b>Recommended Fully Scalable Option</b> <b>Canvas Server with Load Balancer</b>	Canvas Server with Load Balancer	MMS Pool	MTS Pool	
	Install Option	Server	Mobile Infrastructure Node	
Configuration Option	Load Balancer	Mobile Media Server	Media Transcoder Server	
<b>Demonstration Only: Canvas Server on Canvas VWP with All-in-One Mobile Server</b>	Canvas Device			
	Canvas Device with Canvas Server and All-in-One Mobile Server			
Install Option	Not Applicable. Installed at factory			
Configuration Option	All-in-One			
<b>Demonstration Only: All-in-One Mobile Server on Canvas Server</b>	Device 1			
	Canvas Server with All-in-One Mobile Server			
Install Option	Server			
Configuration Option	All-in-One			
<b>Demonstration Only: All-in-One Mobile Server on Canvas Server separate from Canvas VWP</b>	Canvas VWP			Device 2
	Not using any JMS Nodes			Canvas Server with All-In-One JMS
Install Option	Not Applicable. Installed at factory	Server		
Configuration Option	Not Applicable	All-In-One JMS		

## 9—Jupiter Mobile Server

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### 9.9.8 Jupiter Mobile Installations

- [Install Canvas Server with Mobile Infrastructure Node](#)
- [Install Mobile Infrastructure Node](#)

#### ***Install Canvas Server with Mobile Infrastructure Node***

When you select **Server** from the installer a Mobile Infrastructure Node is installed on the device along with the Canvas Server.

Canvas VWPs, Catalyst and CRS-5K, come with Canvas Server and the Mobile Infrastructure Node installed. The Device with the Canvas Server will have a Service (which you can verify in the Windows Services application) called Jupiter Mobile Server. See [Section 9.9.19.1 Verify Jupiter Mobile Server on page 315](#).

- 1 From the **Canvas Installer** select **Server** and **Basic Client**

**Basic Client** is included for convenience as described in [Section 4.2.3.3 Canvas Server on page 20](#).

- 2 Follow the installer options

#### ***Install Mobile Infrastructure Node***

Except for the device hosting Canvas Server which installs a MIN by default, other Mobile Infrastructure Nodes are installed separately on other server devices.

- 1 From the **Canvas Installer** select **Mobile Infrastructure Node**
- 2 Follow the installer options

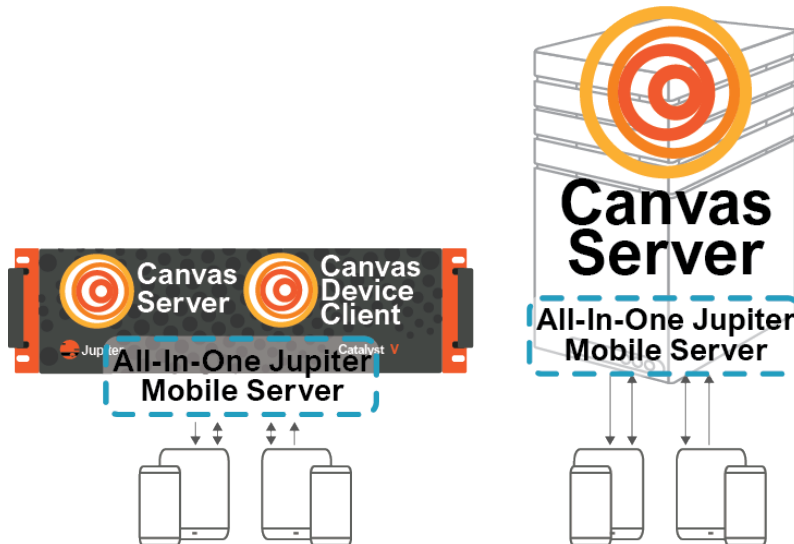


## 9—Jupiter Mobile Server

### 9.9.8.1 All-In-One JMS with Canvas Server

For the All-In-One (AIO) JMS this section covers All-In-One JMS with Canvas Server on a video wall processor and All-In-One JMS with the Canvas Server separate from any video wall processors.

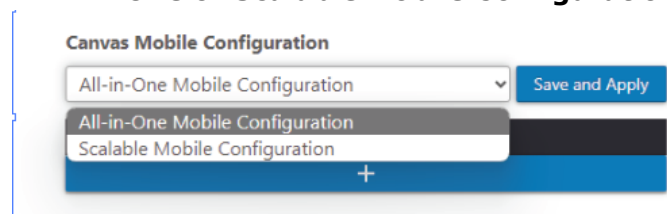
**Figure 9.9 - All-in-One Mobile Server on Canvas VWP or Separate Server**



#### **Configure AIO JMS**

- 1 From the Administration UI open the **More** tab and select **Canvas Mobile Configuration**

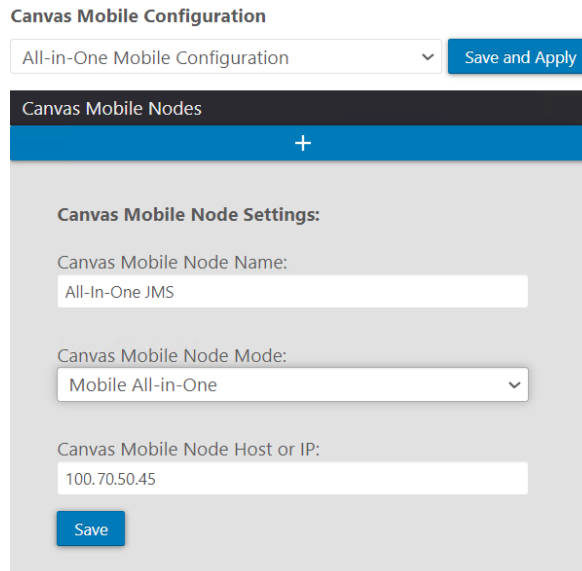
**Figure 9.10 - All-in-One or Scalable Mobile Configuration Dropdown**



- 2 Click the **+** bar below the **Canvas Mode Nodes** header  
The Canvas Mobile Node Settings opens.

## 9—Jupiter Mobile Server

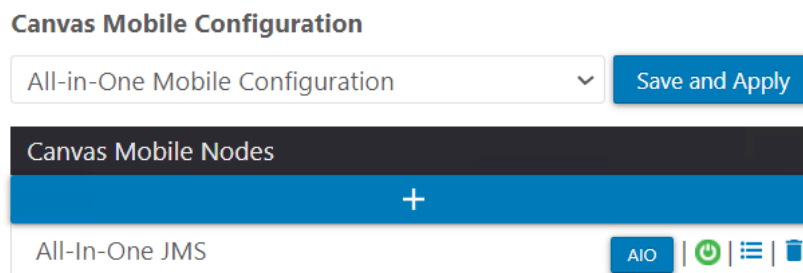
**Figure 9.11 - Canvas Mobile Node Settings for Scalable Mobile Configuration**



- 3 From the dropdown to the right of the **Save and Apply** button select **All-In-One Mobile Configuration**
- 4 In the **Canvas Mobile Node Settings** section enter a name for the Canvas Mobile Node in the **Canvas Mobile Node Name** text box
- 5 From the **Canvas Mobile Node Mode** drop down select **Mobile All-In-One**
- 6 In the **Canvas Mobile Node Host or IP** text box enter the IP address or hostname of the appropriate device
- 7 Click **Save**

When the **All-In-One** JMS is created the **AIO** will appear in the list with a green icon.

**Figure 9.12 - All-In-One (AIO) Created and Active**



## 9—Jupiter Mobile Server

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### 9.9.12.1 Configure Jupiter Mobile Infrastructure Nodes

Load Balancer is the controller scheduler and is the least resource intensive node, so it is recommended for the MIN on the device hosting the Canvas Server to be configured as the Load Balancer.

Media Transcoding Server (MTS) is the most resource intensive node, so it should be on a server separate from other Mobile Infrastructure Nodes. Mobile Media Server (MMS) is medium intensive but should not be on same machine a VWP or Canvas Server or the MTS.

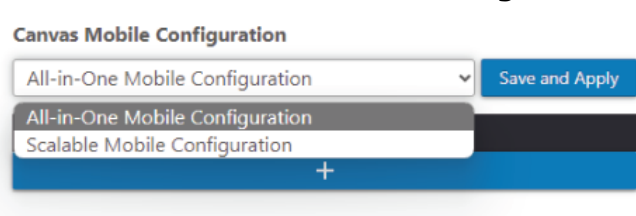
#### **Configure Load Balancer Infrastructure Node**

When creating the first JMS Node, the IP address will be the IP address of the server which Canvas Server is on. For the recommended scalable infrastructure Canvas Server should be on a server which is separate from the Canvas video wall processor.

Note that there can only be one Mobile Load Balancer per system.

- 1 From the Administration UI open the **More** tab and select **Canvas Mobile Configuration**

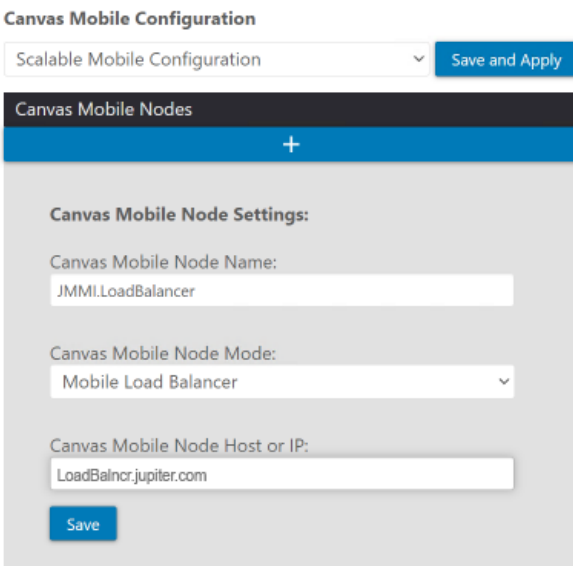
**Figure 9.13 - All-in-One or Scalable Mobile Configuration Dropdown**



- 2 From the dropdown to the right of the **Save and Apply** button select **Scalable Mobile Configuration**
- 3 Click the **+** bar below the **Canvas Mode Nodes** header  
The Canvas Mobile Node Settings opens.

## 9—Jupiter Mobile Server

**Figure 9.14 - Canvas Mobile Node Settings for Scalable Mobile Configuration Load Balancer**



The screenshot shows the 'Canvas Mobile Configuration' interface. At the top, there is a dropdown menu set to 'Scalable Mobile Configuration' and a 'Save and Apply' button. Below this is a section titled 'Canvas Mobile Nodes' with a blue bar containing a white plus sign. Underneath, the 'Canvas Mobile Node Settings' section contains three input fields: 'Canvas Mobile Node Name' with the value 'JMMI.LoadBalancer', 'Canvas Mobile Node Mode' with a dropdown menu set to 'Mobile Load Balancer', and 'Canvas Mobile Node Host or IP' with the value 'LoadBalancer.jupiter.com'. A 'Save' button is located at the bottom of the settings section.

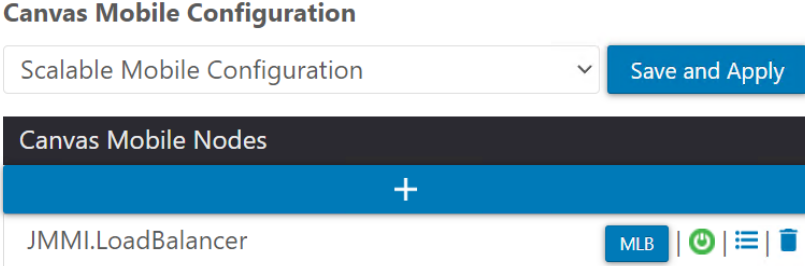
- 4 In the **Canvas Mobile Node Settings** section enter a name for the Canvas Mobile Node in the **Canvas Mobile Node Name** text box
- 5 From the **Canvas Mobile Node Mode** drop down select **Mobile Load Balancer**
- 6 In the **Canvas Mobile Node Host or IP** text box enter the Fully Qualified Domain Name (FQDN) of the appropriate device

The interface will already have the IP address of the Canvas Server. However for security the device hosting the Load Balancer must have HTTPS security and use FQDN.

- 7 Click **Save**

When the Load Balancer is created and activated you will see the green status icon.

**Figure 9.15 - Mobile Load Balancer (MLB) Created**



The screenshot shows the 'Canvas Mobile Configuration' interface after the Mobile Load Balancer has been created. The 'Scalable Mobile Configuration' dropdown and 'Save and Apply' button are still visible. The 'Canvas Mobile Nodes' section now displays a list with one entry: 'JMMI.LoadBalancer'. To the right of this entry are four icons: a blue 'MLB' label, a green power icon (indicating it is active), a list icon, and a trash icon.

### **Configure Mobile Media Server Infrastructure Node**

## 9—Jupiter Mobile Server

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This procedure assumes you have already created the Load Balancer from [Configure Load Balancer Infrastructure Node](#). This assumption means that **Scalable Mobile Configuration** should already appear in the dropdown.

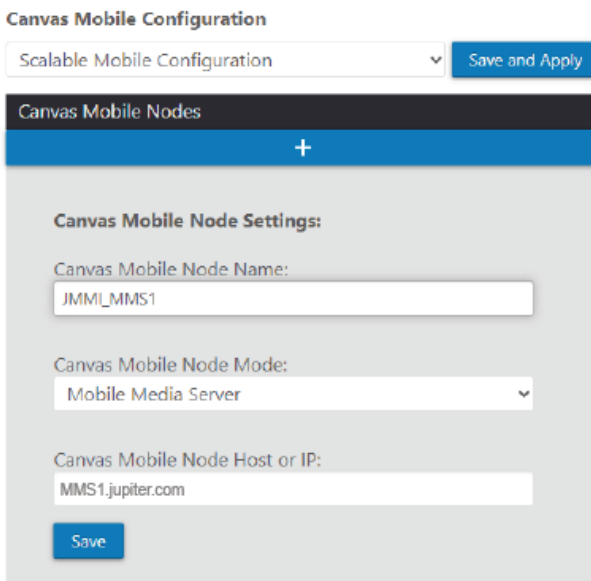
The Mobile Media Server (MMS) is a medium intensity resource usage app.

1 From the Administration UI open the **More** tab and select **Canvas Mobile Configuration**

2 Click the **+** bar below the **Canvas Mode Nodes** header

The Canvas Mobile Node Settings opens.

**Figure 9.16 - Canvas Mobile Node Settings for Mobile Media Server Configuration**



The screenshot shows the 'Canvas Mobile Configuration' interface. At the top, there is a dropdown menu set to 'Scalable Mobile Configuration' and a 'Save and Apply' button. Below this is a 'Canvas Mobile Nodes' section with a blue bar containing a white plus sign. Underneath is the 'Canvas Mobile Node Settings' form, which includes three input fields: 'Canvas Mobile Node Name' with the value 'JMML\_MMS1', 'Canvas Mobile Node Mode' with a dropdown menu set to 'Mobile Media Server', and 'Canvas Mobile Node Host or IP' with the value 'MMS1.jupiter.com'. A 'Save' button is located at the bottom of the form.

3 In the **Canvas Mobile Node Settings** section enter a name for the Canvas Mobile Node in the **Canvas Mobile Node Name** text box

4 From the **Canvas Mobile Node Mode** drop down select **Mobile Media Server**

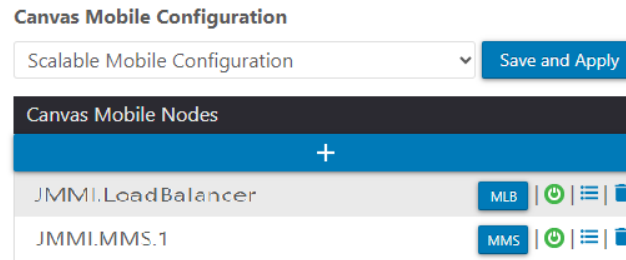
5 In the **Canvas Mobile Node Host or IP** text box enter the FQDN of the appropriate device

6 Click **Save**

When the **Mobile Media Server** is created and activated you will see the green status icon.

## 9—Jupiter Mobile Server

**Figure 9.17 - Mobile Media Server (MMS) Created**



### **Configure Media Transcoding Server Infrastructure Node**

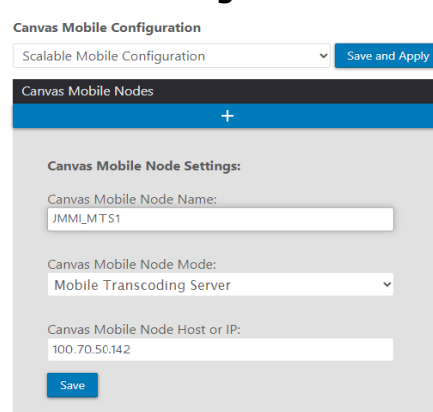
This procedure assumes you have already created the Load Balancer from [Configure Load Balancer Infrastructure Node](#). This assumption means that **Scalable Mobile Configuration** should already appear in the dropdown.

The Media Transcoding Server (MTS) is high intensity for resource usage and you will normally have more MTS per system than MMS.

- 1 From the Administration UI open the **More** tab and select **Canvas Mobile Configuration**
- 2 Click the **+** bar below the **Canvas Mode Nodes** header

The Canvas Mobile Node Settings opens.

**Figure 9.18 - Canvas Mobile Node Settings for Media Transcoding Server Configuration**



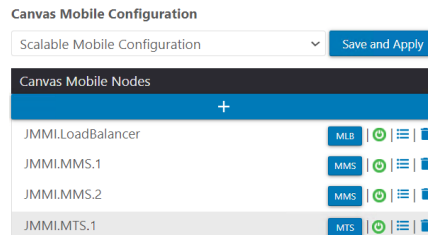
- 3 In the **Canvas Mobile Node Settings** section enter a name for the Canvas Mobile Node in the **Canvas Mobile Node Name** text box
- 4 From the **Canvas Mobile Node Mode** drop down select **Media Transcoding Server**
- 5 In the **Canvas Mobile Node Host or IP** text box enter the IP address or hostname of the appropriate device
- 6 Click **Save**

## 9—Jupiter Mobile Server

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When the **Media Transcoding Server** is created and activated you will see the green status icon.

**Figure 9.19 - Media Transcoding Server (MTS) Created**



### 9.9.19.1 Verify Jupiter Mobile Server

After installation you can check for the Jupiter Mobile Server in the Windows Services app as well check the icons which are provided on the Canvas Mobile Configuration Page.

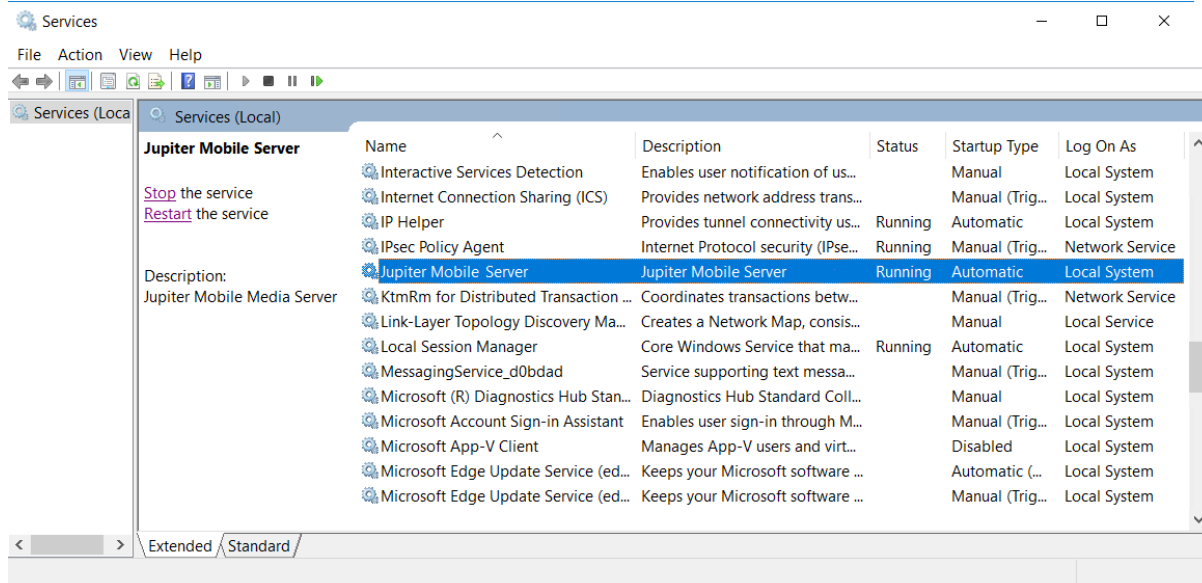
Verify Jupiter Mobile Server Service

The device hosting the Canvas Server uses a service called Jupiter Mobile Server to communicate with the components whether for All-In-One JMS or for the scalable infrastructure.

- 1 *On the device hosting the Canvas Server open the Windows Settings application*  
The Setting app may be opened by entering **Services** in the Widows program search tool.
- 2 *Look for **Jupiter Mobile Server** service*  
A successful installation will create the **Jupiter Mobile Service** service and start it running.

## 9—Jupiter Mobile Server





**Figure 9.20 - Jupiter Mobile Service**





## 9—Jupiter Mobile Server

**Table 9.2: Jupiter Mobile Status Icons**

UI Element	Icon	Description
<b>Green Power Button</b>		The mobile infrastructure node is properly configured and active
<b>Red Power Button</b>		The mobile infrastructure node is either not properly configured or is unreachable
<b>Yellow Power Button</b>		On initial configuration of the mobile infrastructure node before the node has become active
<b>Gray Power Button</b>		The mobile infrastructure node is offline. <b>Offline</b> is a state which can be selected in the <b>Canvas Mobile Node Mode</b> dropdown in the <b>Canvas Mobile Node Settings</b> for a node

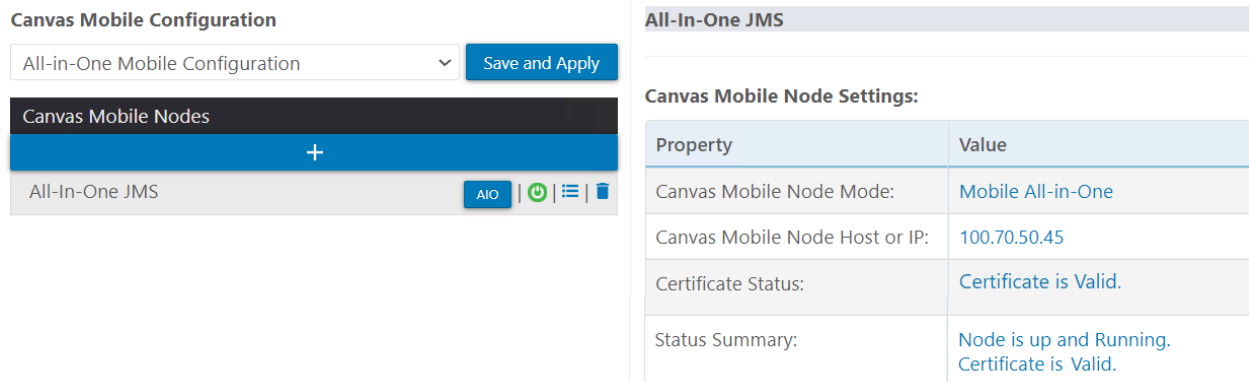
### **Verify Status of All-In-One JMS**

This procedure assumes an All-In-One JMS is configured. To configure an All-In-One JMS see [Section 9.9.8.1 All-In-One JMS with Canvas Server on page 309](#)

- 1 From the Administration UI open the **More** tab and select **Canvas Mobile Configuration**
- 2 Look for the status icon for the AIO

Successful creation and activation will show a green status icon.

**Figure 9.21 - Successful Creation and Activation of All-In-One JMS**



The screenshot displays the 'Canvas Mobile Configuration' interface. On the left, a dropdown menu is set to 'All-in-One Mobile Configuration' with a 'Save and Apply' button. Below this, the 'Canvas Mobile Nodes' section shows a list with a '+' button to add new nodes. One node, 'All-In-One JMS', is listed with a status bar containing 'AIO', a green power icon, and other icons.

On the right, the 'All-In-One JMS' configuration details are shown in a table:

Property	Value
Canvas Mobile Node Mode:	Mobile All-in-One
Canvas Mobile Node Host or IP:	100.70.50.45
Certificate Status:	Certificate is Valid.
Status Summary:	Node is up and Running. Certificate is Valid.

## 9—Jupiter Mobile Server

### Verify Status of Scalable JMS

This procedure assumes an All-In-One JMS is configured. To configure an All-In-One JMS see [Procedure Configure AIO JMS on page 309](#).

- 1 From the Administration UI open the **More** tab and select **Canvas Mobile Configuration**
- 2 Look for the status icon for each node

Successful creation and activation will show a green status icon for each node.

**Figure 9.22 - Successful Creation and Activation of All-In-One JMS**

Canvas Mobile Configuration

Scalable Mobile Configuration Save and Apply

**Canvas Mobile Nodes**

+	
JMMI.LoadBalancer	MLB
JMMI.MMS.1	MMS
JMMI.MMS.2	MMS
JMMI.MTS.1	MTS
JMMI.MTS.2	MTS

100.70.50.142

**Canvas Mobile Node Settings:**

Property	Value
Canvas Mobile Node Mode:	Mobile Transcoding Server
Canvas Mobile Node Host or IP:	100.70.50.142
Certificate Status:	Certificate is Valid.
Status Summary:	Node is up and Running. Certificate is Valid.

## 9—Jupiter Mobile Server

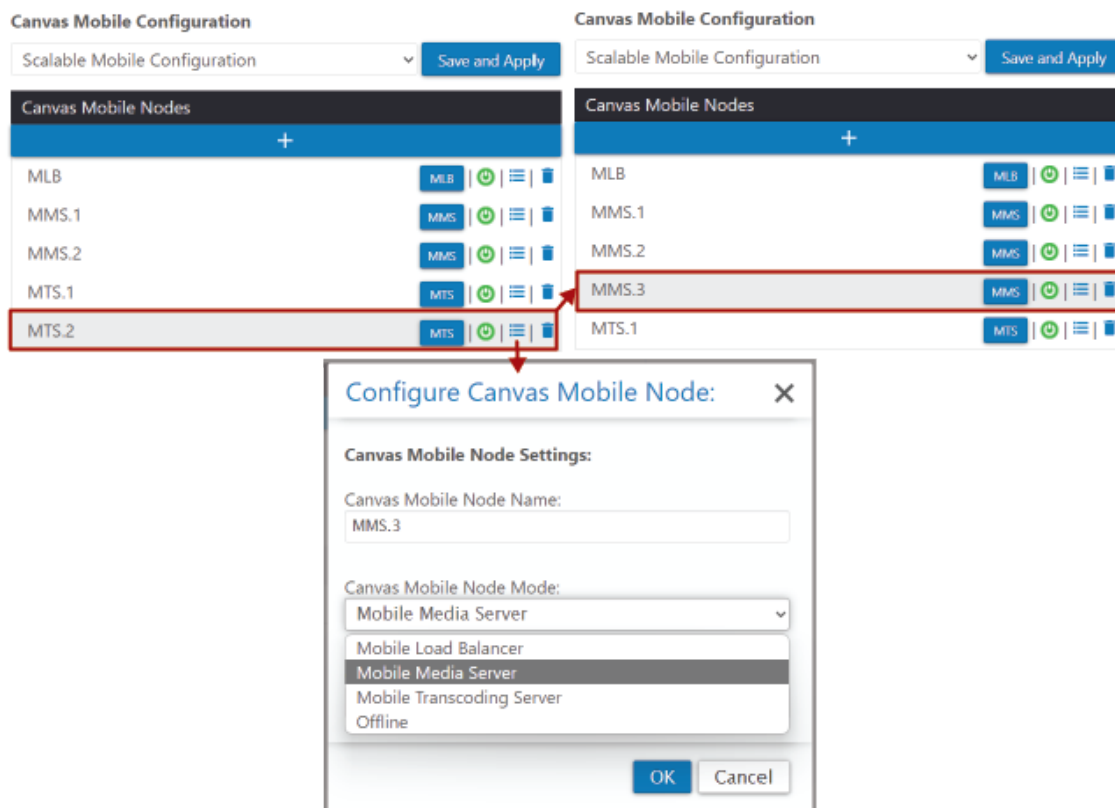
### 9.1.2 Modifying and Deleting Mobile Infrastructure Nodes

#### 9.1.2.1 Editing Mobile Infrastructure Nodes

In this example we will change a MIN from an MTS to an MMS.

- 1 To edit a **MIN**, click the **edit** icon corresponding to the MIN on the list.

The **Configure Canvas Mobile Node** dialog appears. .



**Figure 9.23 - Modify Mobile Infrastructure Node**

- 2 Make the necessary adjustments

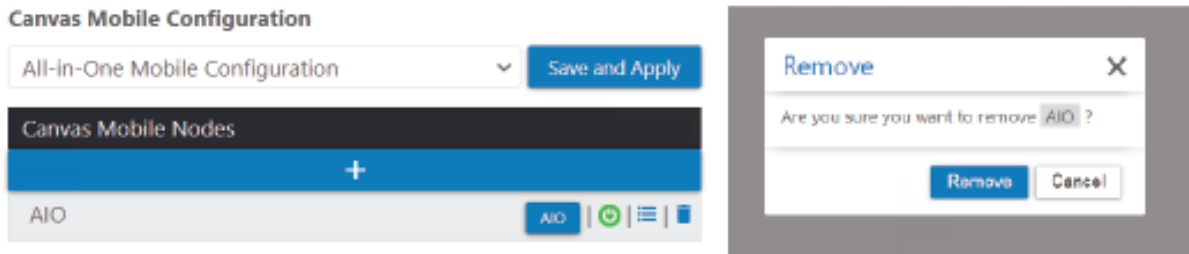
For this example enter the new name in the **Canvas Mobile Node Name** and from the **Canvas Mobile Node Mode** dropdown selected **Mobile Media Server**.

- 3 Click **Apply**.

## 9—Jupiter Mobile Server

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### 9.1.2.2 Deleting Mobile Infrastructure Nodes



**Figure 9.24 - Delete Mobile Infrastructure Node**

- Clicking the garbage can icon next to the corresponding **MIN** prompts a confirmation dialog.
- Click the **Remove** button to remove the **MIN** from the list.

# Chapter 10—Canvas Mobile Client

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## 10. Canvas Mobile Client

### 10.1 Overview

Simply put, Jupiter Mobile allows you to share from your Canvas sources to mobile platforms. And you can also share live video streams from your mobile platforms to Canvas.

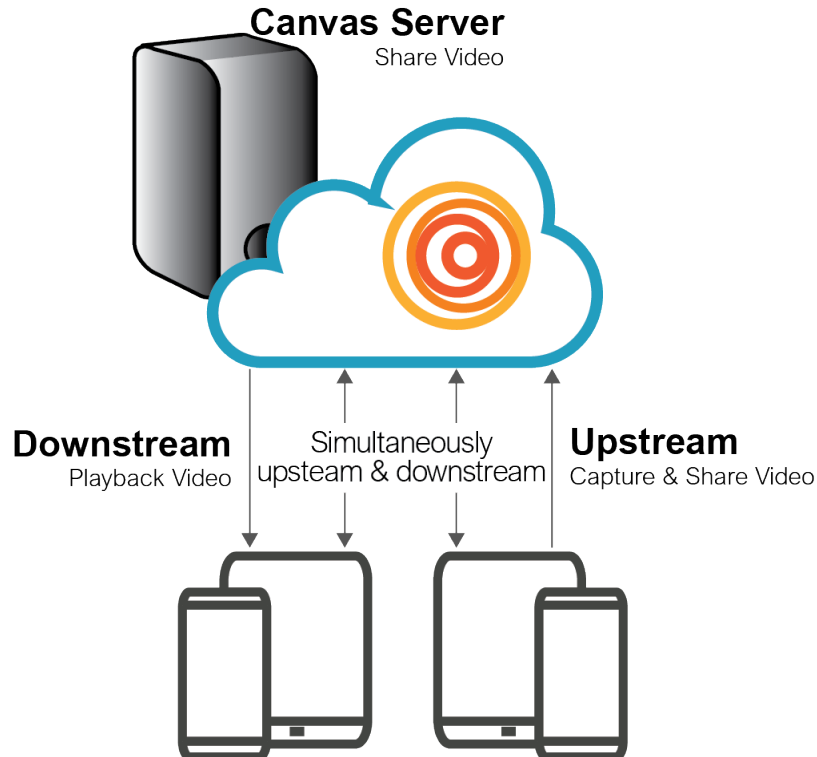
- Share/upstream video to Canvas Server via the Jupiter Mobile Server
- Playback/downstream video from Canvas Server via the Jupiter Mobile Server
- Simultaneously upstream/downstream to/from Canvas Server via the Jupiter Mobile Server

Photographers say the best camera is the one you have with you. By extension it is often your phone. With Jupiter Mobile your phone is an extension of a collaborative environment.

## 10—Canvas Mobile Client

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**Figure 10.1 - Jupiter Mobile Architecture**



Jupiter Mobile integrates directly with the full Canvas environment, streaming to and from command and control centers to personnel in the field, providing encrypted secure transmissions either one way or two ways.

Jupiter Mobile grants authorized users secure access to view video sources, to share digital information, and instantly collaborate regardless whether their physical location is inside a control room or in remote field locations.

The only requirements to use Jupiter Mobile are a mobile device with Internet access to a web browser. And Canvas on the other end.

### 10.1.1 Mobile Device Requirements

- Android phone with Android 12 OS
- iPhone with iOS 15

## Overview

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### 10.1.2 Downstream Video Use Case

Suppose there's a situation in a command/control center which requires the attention of people both inside the room and others working remotely outside of the office. A remote resource person can be asked to look at a specific video source. The remote user would launch their mobile client on their cell phone and type a URL in the browser to login.

The remote user can either

1. Search and find the source to view or
2. Click a link s/he was texted via SMS and log into CanvasMobile to start downstreaming

Jupiter Mobile enables seamless team communication, 24/7, regardless of location.

### 10.1.3 Upstream Video Use Case

A remote authorized user can capture real-time video from their remote location to the team in the Control Center where authoritative and technical leaders can collaborate. This feature is ideal for live sharing during active emergency incidents, damaging weather storms or post-situation response where more eyeballs can be brought into the scene.

Police or Utility crews in the field witness a situation which requires escalation to the command center. The agent in the field can initiate video capture from their cell phone and upstream it back to the command center to be shared and discussed on the video wall. S/he launches their Jupiter Mobile client, then using either their front or rear facing camera, can share in real-time the incident they are witnessing and recording.

### 10.1.4 Interactive Use Cases — Training/Collaborative Troubleshooting

Technical line crew making repairs in the field to utility poles can request engineering feedback from the utility pole during a challenging repair. By collaborating with in-house authorities through upstream video sharing, engineers can see the issue and provide direction. Additionally, engineers can text diagrams or send URL links to help technicians complete the task.

A prime example for Jupiter Mobile interaction is the Collaborative Troubleshooting scenario. You can get audio and visual information from the field — the field technician can show and describe to the command center exactly what they are looking at whether it is a failed device in a roadside equipment cabinet, a server misbehaving in a server farm, or any of a million similar scenarios. It provides the opportunity to use the

## 10—Canvas Mobile Client

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collective experience and intelligence of the group to focus on the issue and get it resolved.

Not only does the Collaborative Troubleshooting scenario provide for a higher success rate on field calls and truck rolls, but it also is an exceptional on-the-job training tool. And the video session can be archived and used as proof of performance of an action in the field.

This type of Collaborative Troubleshooting is what was used to bring the crew members of Apollo 13 home after an explosion threatened the air supply. Mission Control improvised the means to support the three men for four days to successfully bring the crew home.



## Jupiter Mobile Client Screens and Usage

### 10.2 Jupiter Mobile Client Screens and Usage

This section provides an overview of each page, what you can do from each page, the status as you play or upstream videos.

#### 10.2.1 Home Page

The home page is the landing page and main page for Jupiter Mobile. From the home page you can

- Play shared videos (downstreaming to mobile)
- Search for shared videos
- Upstream video captures from your phone's camera (upstreaming from mobile)
- Simultaneously play a video and upstream a video capture

**Figure 10.2 - Home Screen**



On the home page you are able to scroll and search through the **Sources** list and select a source to downstream. You can scroll to select a shared source and when you tap it, it will open the video in the playback screen.

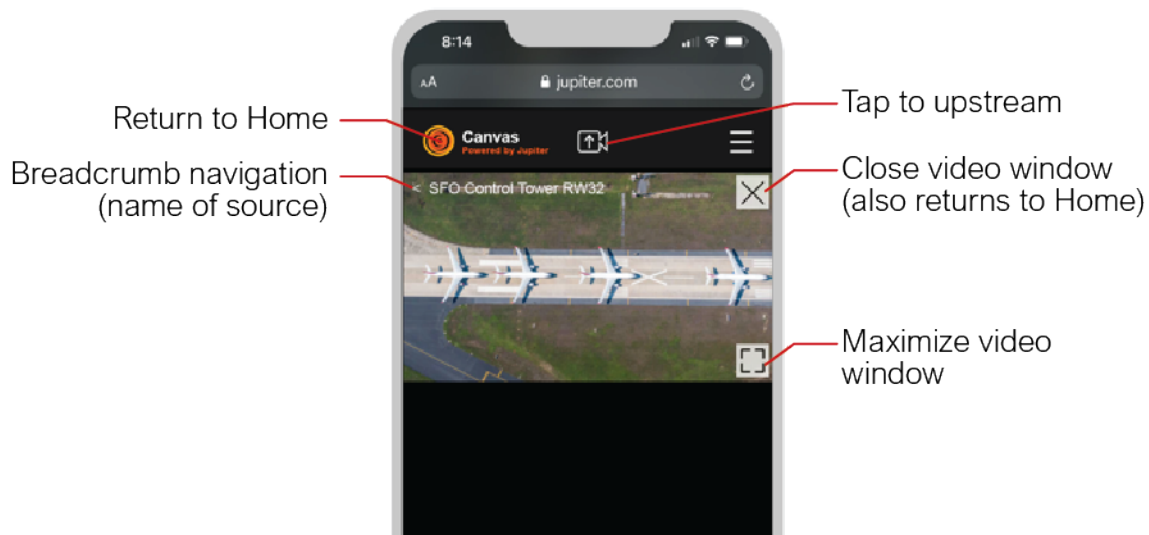
## 10—Canvas Mobile Client

---

### 10.2.2 Playback Screen

The playback screen is where active downstreams (shared video) and upstreams (live captures that you are sharing) play.

**Figure 10.3 - Playback screen**



The full screen icon is in bottom right corner of all videos.

From the Playback screen, you can navigate back to the home screen multiple ways:

- By tapping the breadcrumb navigation (upper left corner of video window), or
- By tapping the Canvas logo which will always bring me back home, or
- By tapping the close icon which is in the top right of all video windows

In addition to the playback screen there is a Picture in Picture window which allows a video to keep playing while you are searching for the next source. See [Section 10.2.4 Picture in Picture](#) on page 328 for more detail.

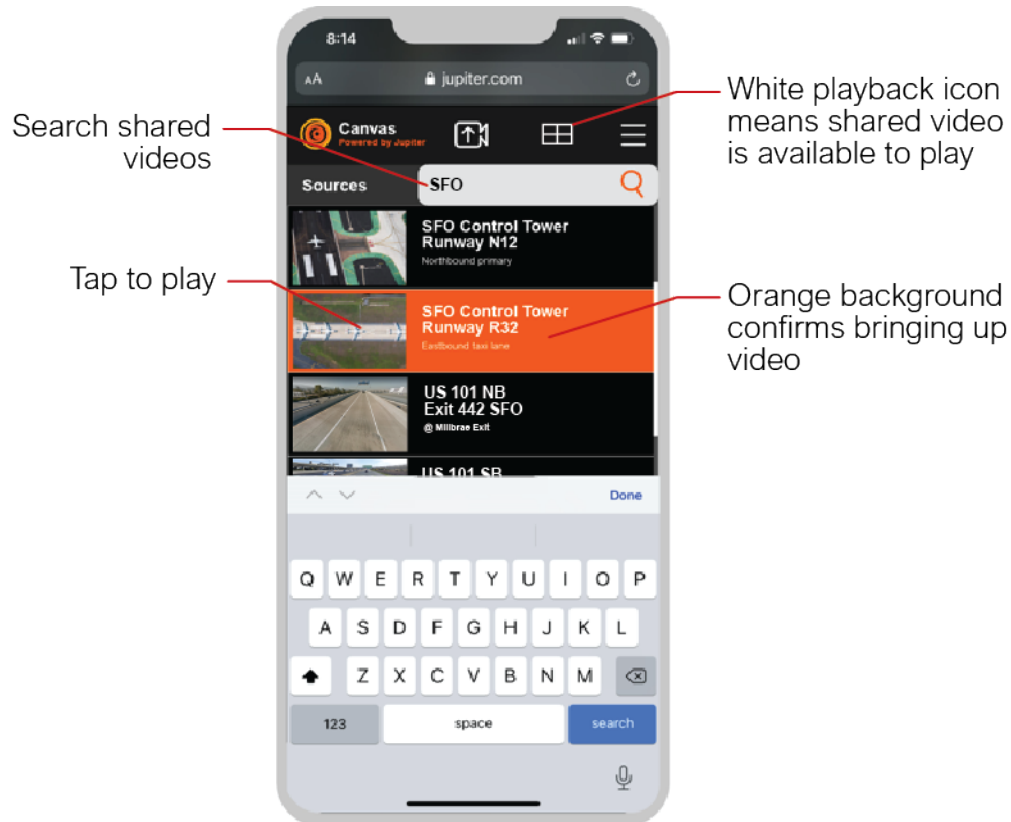
## Jupiter Mobile Client Screens and Usage

---

### 10.2.3 Search Mode

Search mode helps when searching for a particular shared source, or trying to find a shared source from a long list. From the home page press the search magnifying glass which brings up the search keyboard.

**Figure 10.4 - Home screen search mode**



When selecting a shared source if the source is available the playback icon will be white. Once the playback is initiated the playback icon will turn orange.

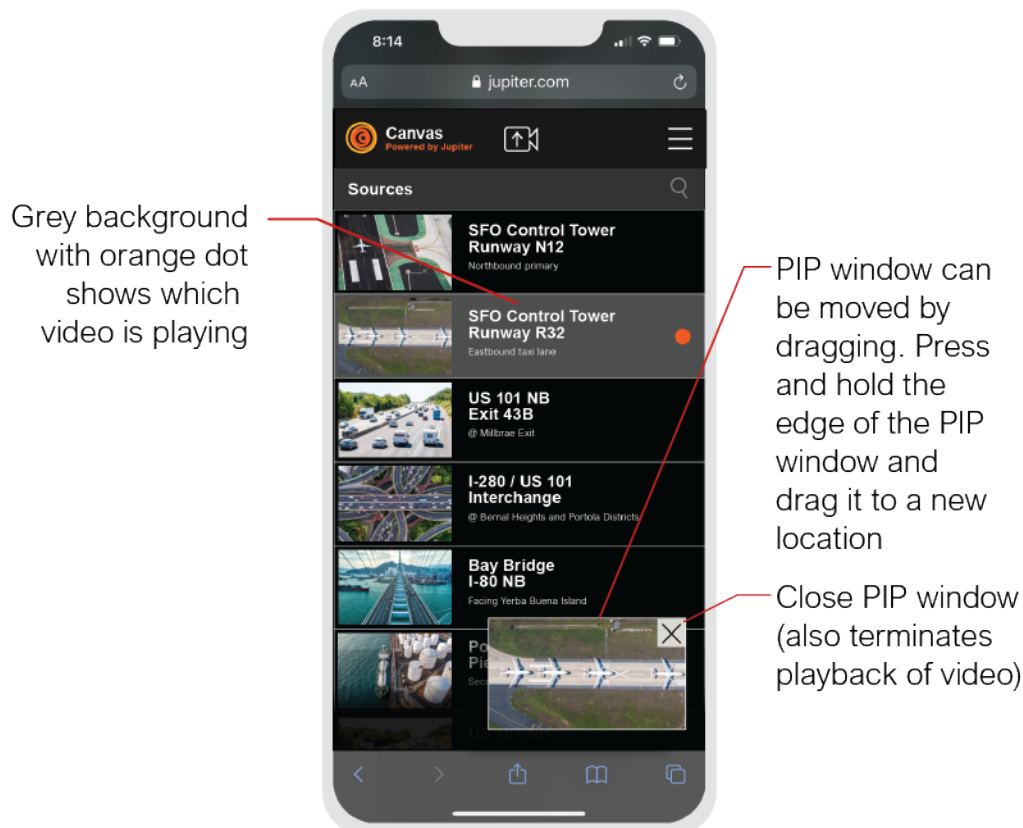
## 10—Canvas Mobile Client

### 10.2.4 Picture in Picture

If you return home while a source is actively streaming, the Picture in Picture (PIP) window is activated and the downstreamed source plays persistently in a small window initially located in lower right corner.

You can reposition the PIP elsewhere on the screen so that you can read and access information which may be visually blocked by the PIP. Move the PIP by pressing and holding the colored edge of the PIP window and it will stick to and follow your finger to another location until you lift your finger and break the contact.

**Figure 10.5 - Picture in Picture over home screen**



On the home screen, you can tell which source is currently playing because the active state of the source is a lighter gray and a small orange circle is visible at the right edge.

Closing the playback by tapping the close X icon located in the upper right corner on icon located in window terminates the playback session.

## Jupiter Mobile Client Screens and Usage

---

### 10.2.5 Capture Screen

At any point during your Jupiter Mobile client interaction, you can start an upstream session to capture and share real-time activity. Just tap the upstream icon located at top dead center of the interface.

Tapping the upstream icon takes you to the capture screen.

When you are in upstream preview mode you will see

- The upstream icon is still orange and
- The instructions on the screen

**Figure 10.6 - Playback screen with downstreaming and upstreaming**



Audio mic icon is available when source has audio. Click to mute or provide audio.

## 10—Canvas Mobile Client

---

### 10.3 Login

1. Provided link, username and initial password from your Canvas IT Administrator
2. Launch browser from smart phone
3. Copy link and paste into your browser
4. Enter username and password and click Sign In

Arrive at home page.

---

**Note:** Mobile user creation is part of Canvas User creation. See [Section 6.1.1 Roles and Users](#) on page 138.

---

## Playback (Downstreaming)

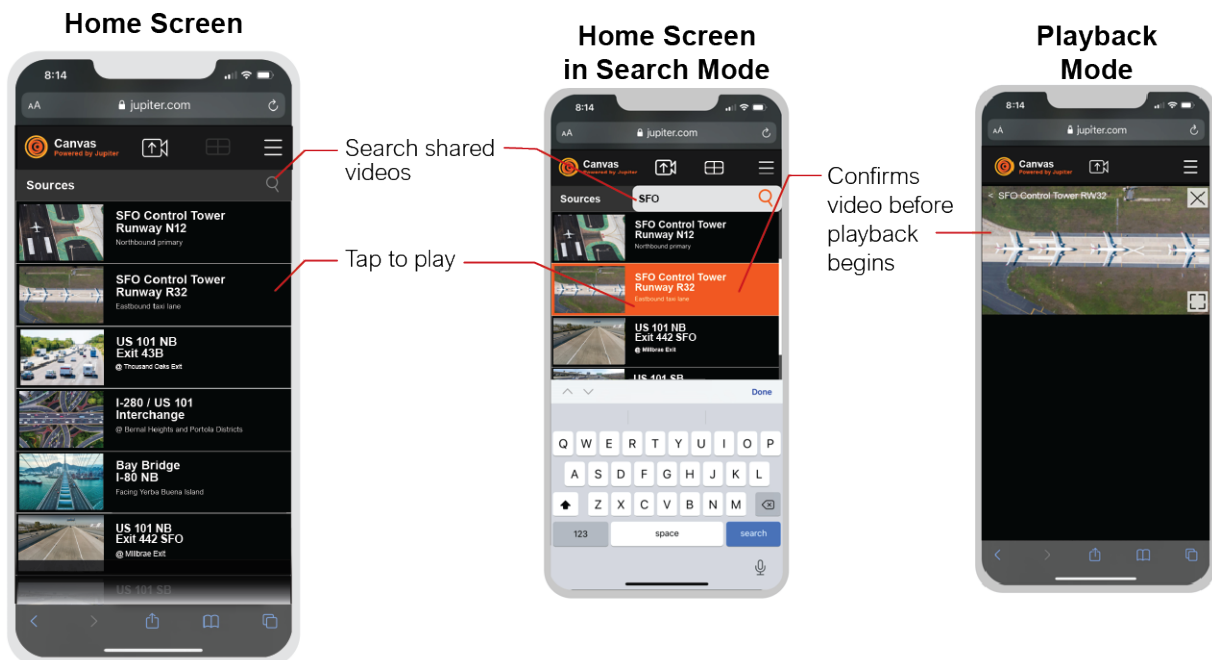
### 10.4 Playback (Downstreaming)

On the home page you are presented with a full written list of shared sources which you have permission to view.

- To play a video tap it
- To search for a video select the magnifying glass and enter the search criteria via the keyboard

If a video isn't available or you are disconnected, the gray Playback icon placeholder appears.

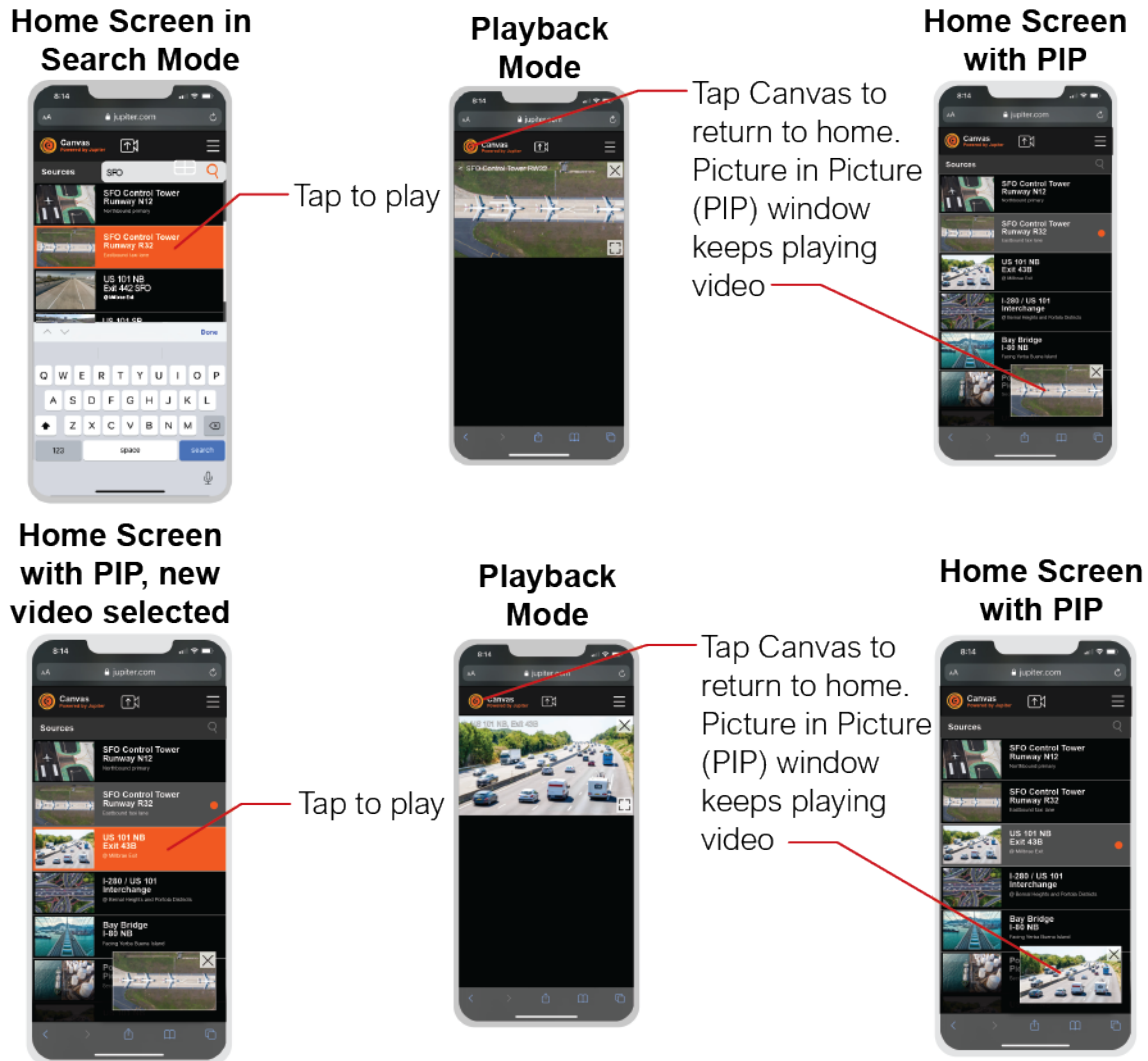
**Figure 10.7 - Home screen, search mode and playback mode**



## 10—Canvas Mobile Client

You can switch between shared videos, while the initial video is still playing. Picture in Picture (PIP) window appears floating above the home page. You can move the window so that it does not block the text or image below. When a second source is selected, it replaces the previous downstream source.

**Figure 10.8 - Picture in Picture on Home Page**



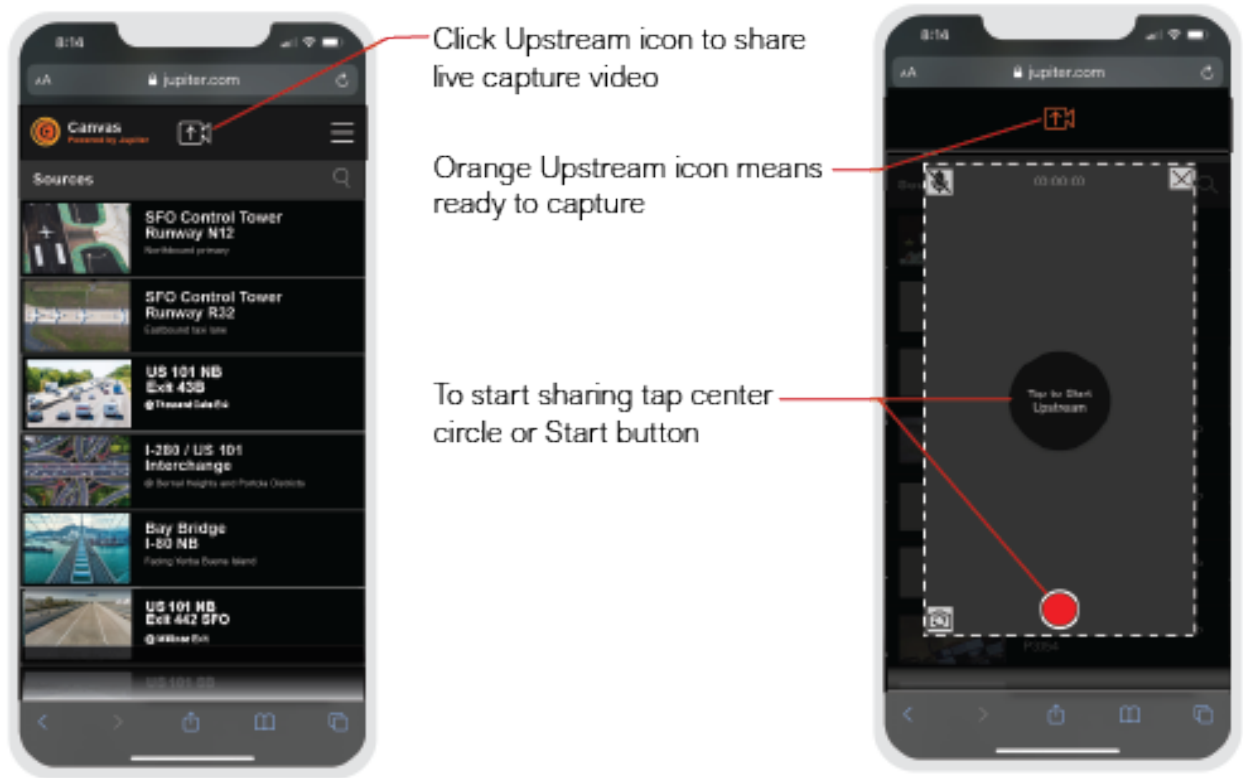


## Upstreaming a Video Capture

### 10.5 Upstreaming a Video Capture

Share a video capture by clicking the upstream icon. The upstream icon is available on every screen. You can share a video capture even while playing back a shared source.

**Figure 10.9 - Upstreaming a video capture**



#### 10.5.1 Share Live Video Upstream

1. Tap Upstream icon  
The upstream icon is available at the top middle of every screen.
2. Either tap the **Tap to Start Upstream** button at the center of the preview window or on the red start button near the bottom of the window  
This action starts the upstream session.
3. Close session  
You can cancel the session by tapping the X close icon and will return to the home screen.

## 10—Canvas Mobile Client

### 10.6 Simultaneous Playback and Sharing Capture

You can share your video capture while playing a shared video.

**Figure 10.10 - Simultaneous playback and upstream sharing**



## Chapter 11—CRS-5K

---

### 11. CRS-5K

The Canvas Conference Room System with 5K output (CRS-5K) is a small but powerful computer designed for rapid sharing of presentations in a meeting room.

With the Canvas CRS-5K system, teams in huddle rooms can quickly collaborate using live video (streaming), applications, document presentations, and web windows.

The CRS-5K provides this versatility by running a Canvas Client and Canvas SimpleShare software. Canvas SimpleShare permits sharing content from locally connected personal computers, and Canvas allows sharing of data from the entire Canvas domain of computers and attached devices.



**Figure 11.1 - Canvas CRS-5K**

## 11—CRS-5K

---

### 11.1 CRS-5K Functionality

The CRS-5K is a conference room appliance that provides access to:

- Web pages
- Network camera streams
- Remote PCs via VNC
- Windows applications
- Shared desktops

With a built-in graphics adapter, the CRS-5K delivers a maximum output resolution of 5120 x 2160 @ 60Hz. It delivers up to three 5K outputs, four 4K, or four HD outputs.

The CRS-5K has four USB 3.0 compliant ports, one Ethernet port, a microphone input, and an audio output which can be used with a headset or an amplified speaker system.

It may be configured as an independent processor or part of a Canvas system, sharing Sources and Canvases.

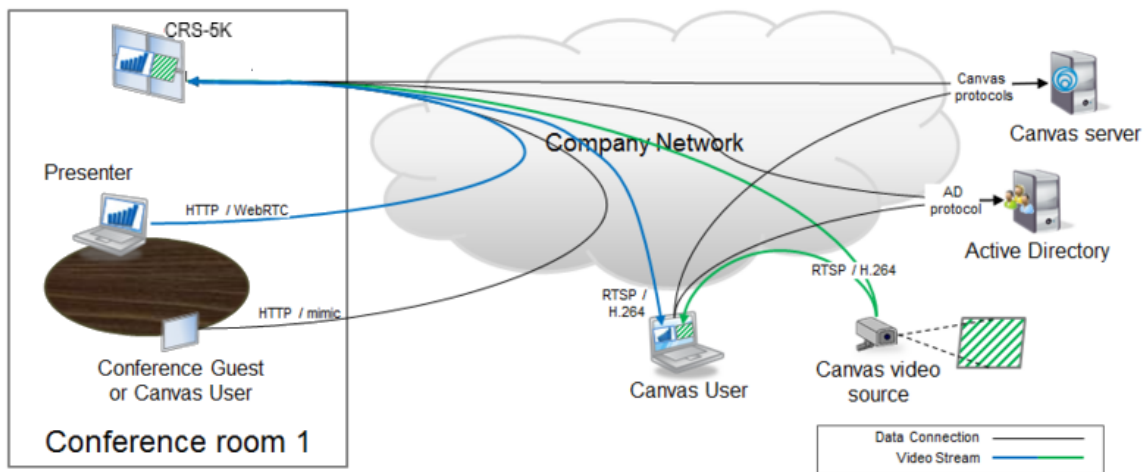
WebRTC (a free, open project that provides browsers and mobile applications with Real-Time Communications (RTC) capabilities) is used by Canvas Users and Conference Guests running Chrome to share presentations for local display in the room by the CRS-5K. Remote display by any Canvas User with permission to view the appropriate Canvas is also possible.

The Canvas Web Mimic interface is used by Canvas Users and Conference Guests to create, remove, resize, and modify the windows (including Canvas windows) displayed on the monitors controlled by the CRS-5K. This interface supports both mouse/keyboard.

## 11—CRS-5K

### 11.1.1 Canvas Client

When used as a part of a Canvas system, the CRS-5K connects as a Canvas client through the company network to a Canvas Server. The CRS-5K is used by Canvas Users as well as Conference Guests (who may or may not be Canvas Users).



**Figure 11.2 - CRS-5K Network Overview**

### 11.1.2 Standalone CRS-5K System

Canvas Server is installed in a CRS-5K at the factory to provide an independent display system with access to streaming, VNC, Web sources and local desktops. The **Standalone CRS-5K** has full Canvas functionality. Additional Canvas licenses are required to add Clients.

## 11—CRS-5K

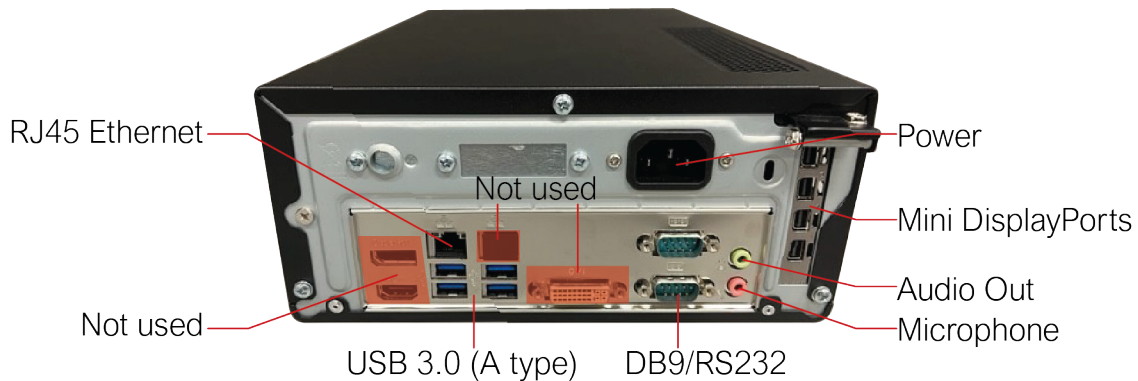
---

### 11.2 CRS-5K Hardware

#### 11.2.1 Connections

- 4 mini DisplayPort ports
- 4 USB 3.0 compliant ports
- 1 Ethernet port
- 1 microphone input
- 1 output which can be used with a headset or an amplified speaker system

Ethernet and USB can be used for inputs and controls.



**Figure 11.3 - CRS-5K Rear Panel**

##### 11.2.1.1 Mini DisplayPorts

The four mini DisplayPort connectors on the right side are the primary connections to displays. Connect one output port to one display, i.e., don't connect several ports to the same display. To drive a single 5K display, use only one connection from the CRS-5K.

A convenient feature of the CRS-5K is that regardless of which port cables are used, Windows will build a display wall using the monitors in the order which they are connected. There is no set physical numbering of the chassis ports. If two cables are plugged into ports 2 and then 4, port 2 becomes output #1 and port 4 becomes output #2. If later plug a cable into the topmost port, it becomes output #3.

If a cable is unplugged, Windows automatically adjusts the wall size downwards (e.g., from 3x1 to 2x1). Plug the cable back in, and Windows automatically adjusts the wall size upwards (e.g., back to 3x1). See chapter 3 for additional details.

## 11—CRS-5K

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Different display types of displays may be connected simultaneously, e.g.: a Samsung on port 1, a Mitsubishi on port 2, an NEC on port 3, etc.

Different connector types may be used simultaneously, e.g.: Mini DP to DisplayPort on port 1, Mini DP to HDMI on port 2, Mini DP to DVI on port 3, etc.

### 11.2.1.2 CRS-5K Cables and Adapters

The mini DisplayPorts are the primary outputs. For using DisplayPort, HDMI, and DVI use adapter cables:

#### 11.2.1.2.1 DisplayPort

For displays with DisplayPort connectors, use miniDP-to-DP cables. DisplayPort version 1.2 or higher cables are needed to support up to 4K@60Hz. DisplayPort version 1.4 or higher cables are needed to support up to 5K@60Hz. Cables must support signals up to 8K.



**Figure 11.4 - Mini Display Port to Display Port Cable**

#### 11.2.1.2.2 HDMI

For displays with HDMI connectors, each CRS-5K output requires a miniDP-to-HDMI adapter plus an HDMI cable. The adapter comes in two varieties — passive and active. Use active adapters to drive HDMI monitors.

Active adapters allow up to 5K throughput, although many only support 30Hz. HDMI version 1.4 or higher cables support signals up to 5K@30Hz. HDMI 2.0 cables are needed to support 5K@60Hz, so look for products that say “DP 1.2 to HDMI 2.0”.



## 11—CRS-5K

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### Figure 11.5 - Mini Display Port to HDMI 4K Active Adapter

#### 11.2.1.2.3 DVI

For displays with DVI connectors for each CRS-5K output use a miniDisplayPort-to-DVI dongle plus a DVI cable. The adapter comes in two varieties — passive and active. Use active adapters to drive DVI monitors.

Jupiter supplies miniDP-to-DVI dongles, but they must be purchased separately. No DVI dongles are included with the CRS-5K.

DVI cables can send signals up to 1920x1200@60Hz.



Figure 11.6 - Mini Display Port to DVI Cable

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**Note:** Use HDMI to drive a 4K or DisplayPort to drive 5K display - not DVI.

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## Chapter 12—Canvas SimpleShare

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### 12. Canvas SimpleShare

The Canvas SimpleShare feature can be accessed from a web browser. Canvas SimpleShare allows users to share their desktop or application on their desktop on a Mimic Wall.

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**Note:** Canvas SimpleShare is compatible with the Chrome, Edge, and Safari browsers.

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**Note:** Canvas SimpleShare is different than Pana SimpleShare.

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**Canvas** users or guests can share their entire desktop or a single application using the SimpleShare web interface.

There are two ways to access Canvas SimpleShare. Canvas SimpleShare can be accessed through the SimpleShare web-interface or a Canvas Mimic. Both these methods will be explained in [Section 12.1. Canvas SimpleShare Web-Interface](#) and [Section 12.2. Using Canvas SimpleShare with Mimic](#).

- Canvas Mimic:  
<https://<MimicHost>:8043/mimic>
- Share web interface:  
<https://<hostname>/SimpleShare>.

or

<https://<IP> Address/SimpleShare>

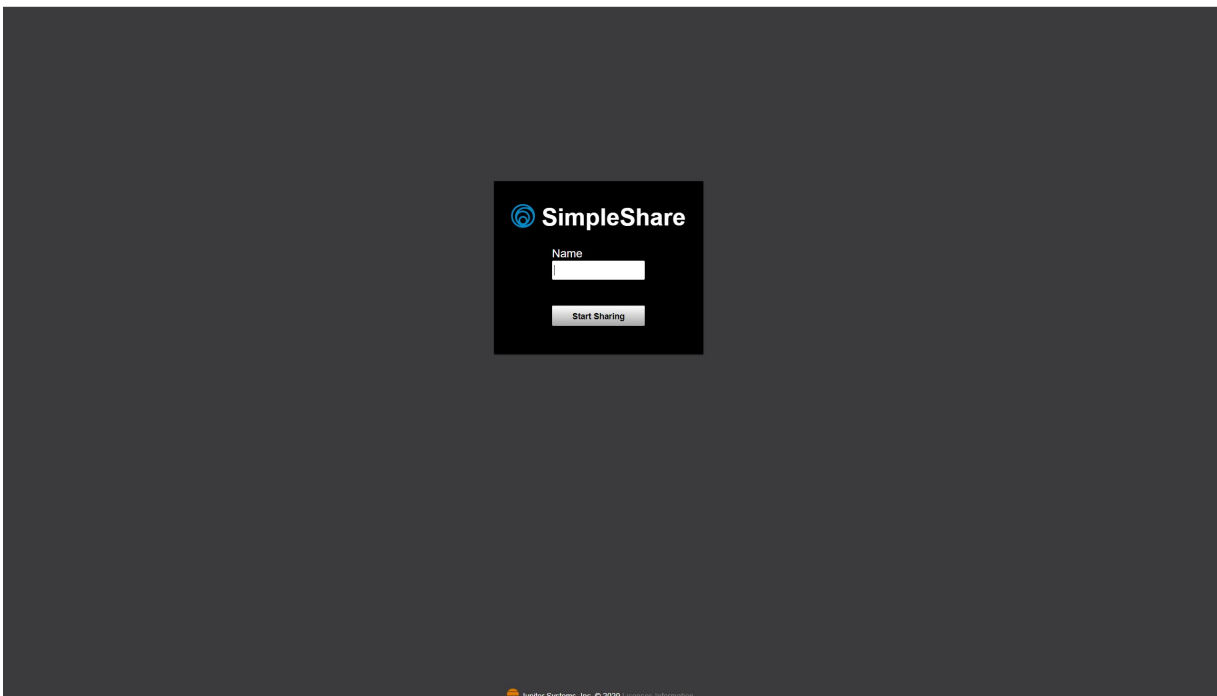
This **MimicHost/CanvasServerHost** is part of the address you use to access the **Wall**. It can be an IP address or a hostname (e.g: localhost).

## 12—Canvas SimpleShare

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### 12.1 Canvas SimpleShare Web-Interface

To share a single application window or your desktop using the Canvas SimpleShare web interface:

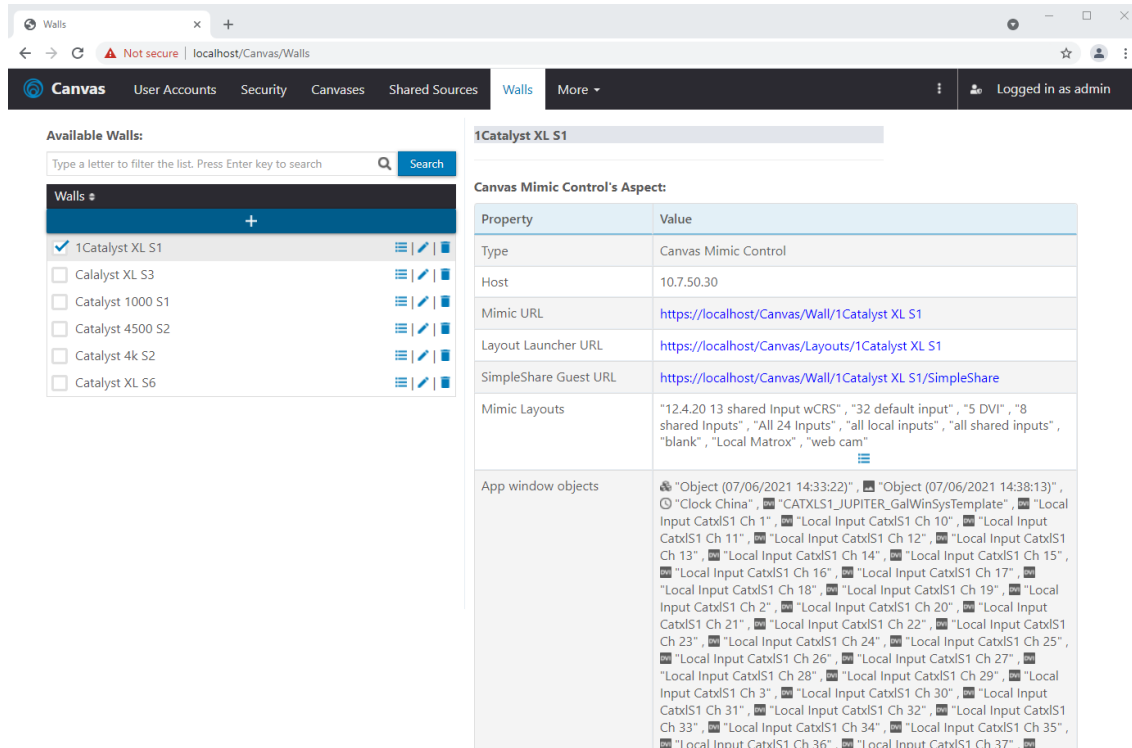


**Figure 12.1 - Canvas SimpleShare Web-Interface**

1. Open a browser (**Canvas SimpleShare** is compatible with Chrome, Edge, and Safari)
2. In the browser's address bar, enter the URL for the Share interface:  
<https://<hostname>/SimpleShare> or  
<https://<IP> Address/SimpleShare>

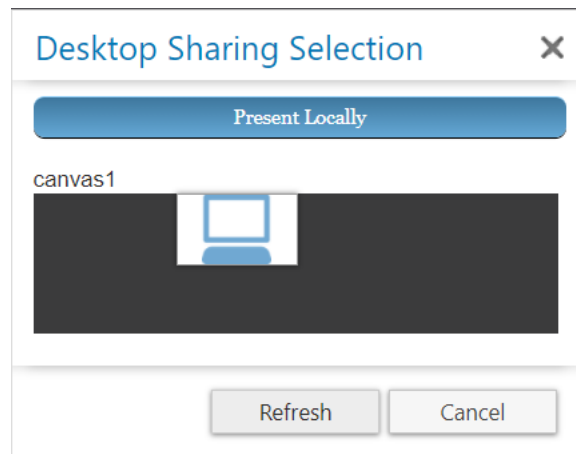
This link can also be found in the walls tab of the Administration UI.

## Canvas SimpleShare Web-Interface



**Figure 12.2 - Canvas SimpleShare Web-Interface URL**

- The screen (shown in [Section 12.1 "Canvas SimpleShare Web-Interface"](#)) will appear. Click "Start sharing" and the following dialogue will appear



**Figure 12.3 - SimpleShare Options Dialog**

## 12—Canvas SimpleShare

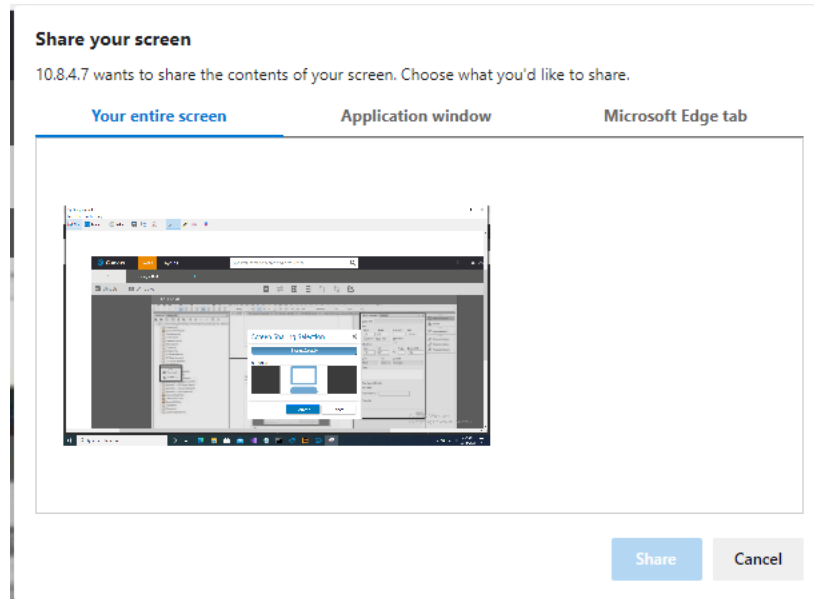
---

4. You can either present locally or present to a Canvas (refer to [Section 12.3. Using SimpleShare with a Canvas](#) to use Canvas SimpleShare).
5. After selecting "Present Locally" or a Canvas for SimpleShare you will have the option to share your entire screen, an application, or a browser tab.

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**NOTE:** Presenting to a Canvas, shares your screen's content to a SimpleShare widget in Canvas. [Section 12.3. Using SimpleShare with a Canvas](#) explains this further.

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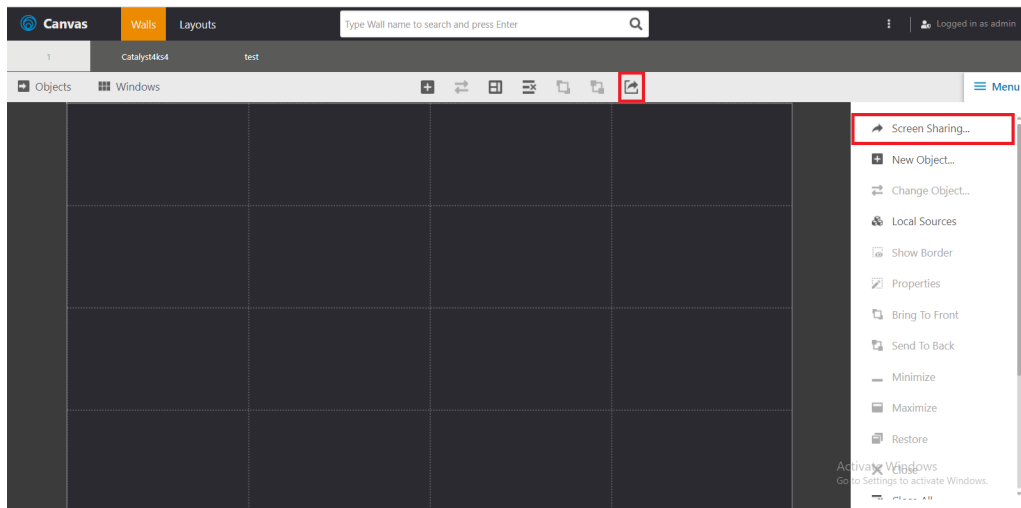
**Figure 12.4 - Screen Share Options**

## Using Canvas SimpleShare with Mimic

### 12.2 Using Canvas SimpleShare with Mimic

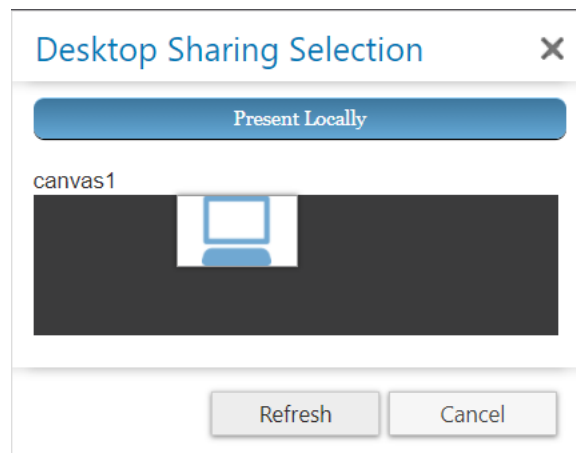
Follow the following steps to start a SimpleShare using mimic:

1. Open a mimic using the Canvas Client or the Web Client.
2. Select the SimpleShare Icon from the menu or from the toolbar as shown in the image below.



**Figure 12.5 - Mimic SimpleShare Icons**

3. The following Dialogue will pop up.



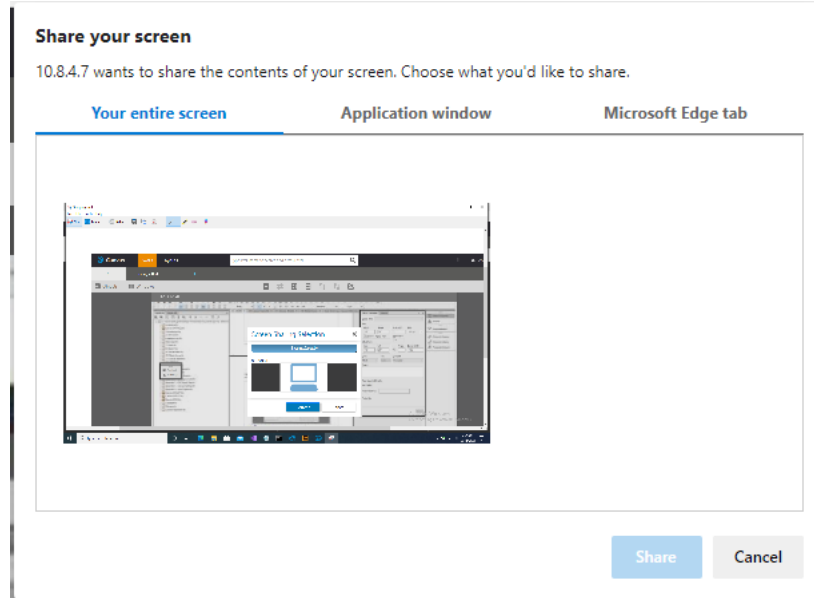
**Figure 12.6 - SimpleShare Options Dialog**

4. You can either present locally or present to a Canvas (refer to [Section 12.3. Using SimpleShare with a Canvas](#) to use Canvas SimpleShare).

## 12—Canvas SimpleShare

---

5. After selecting "Present Locally" or selecting a Canvas to use with SimpleShare you will have option to share your entire screen, an application, or a browser tab.



**Figure 12.7 - Screen Share Options**

## Using SimpleShare with a Canvas

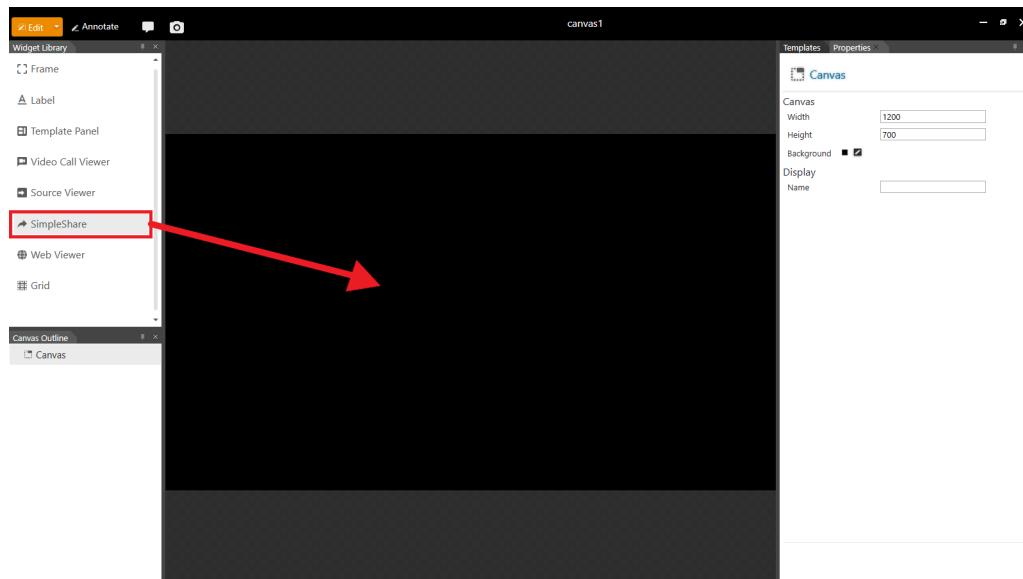
---

### 12.3 Using SimpleShare with a Canvas

Before you can use SimpleShare with a Canvas you have to add a SimpleShare widget to the Canvas.

To add a SimpleShare widget:

1. Open the Canvas in edit mode.
2. Find the SimpleShare widget in the widget library and drag it to the canvas.

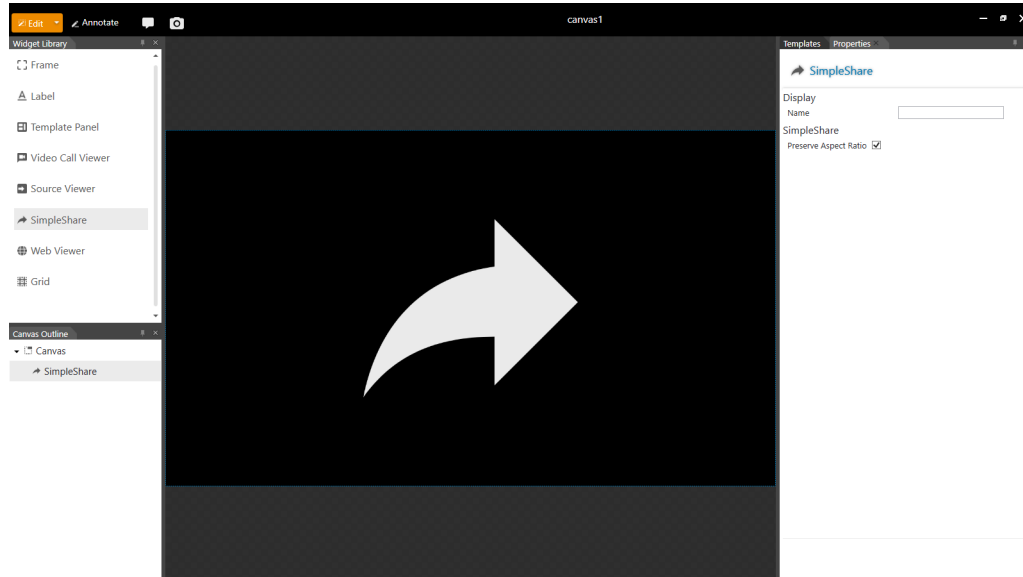


**Figure 12.8 - Adding SimpleShare Widget**

3. The SimpleShare logo will not appear on the Canvas. You will now have the option to use SimpleShare with the Canvas.

## 12—Canvas SimpleShare

---



**Figure 12.9 - SimpleShare Widget on Canvas**

4. Refer to [Section 12.2. Using Canvas SimpleShare with Mimic](#) and [Section 12.1. Canvas SimpleShare Web-Interface](#) to share your screen/application with SimpleShare.



# Appendix A—Canvas Server High Availability (HA)

---

## A. Canvas Server High Availability (HA)

The Canvas Server is installed on an ESX host within a VMware vSphere HA Cluster. The vSphere HA provides high availability for virtual machines by pooling the virtual machines and the hosts they reside on into a cluster. Hosts in the cluster are monitored and in the event of a failure, the virtual machines on a failed host are restarted on alternate hosts.

In a vSphere HA cluster, a Single Host is automatically elected as the Master Host. The Master Host communicates with vCenter Server and monitors the state of all protected virtual machines and of the Slave Hosts.

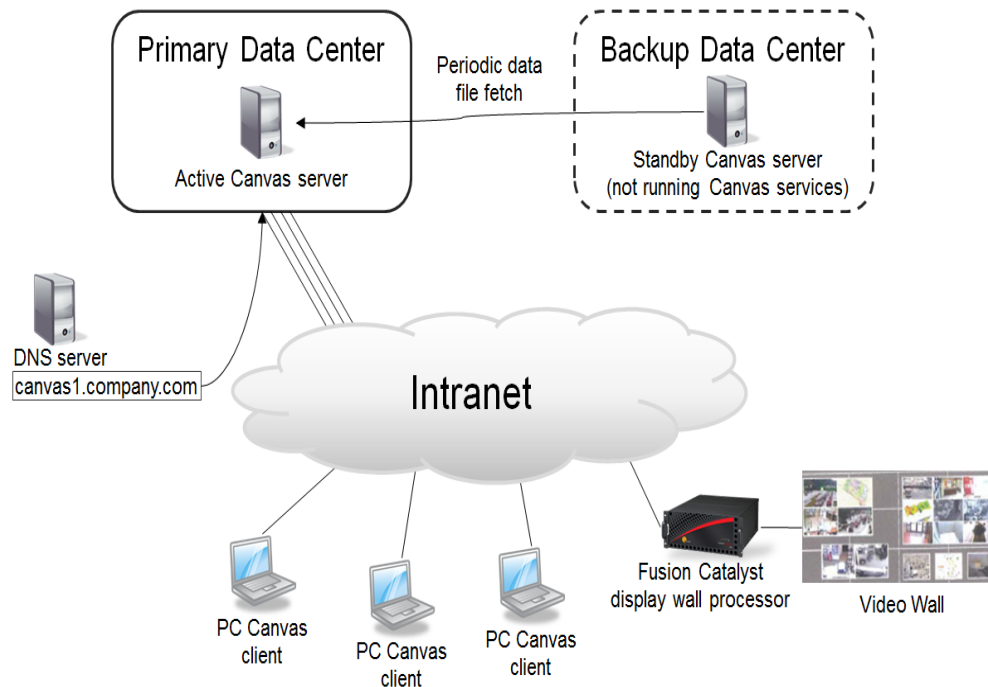
### A.1 Failover within a Data Center

If the Master Host fails, VMware automatically restarts Canvas Server on another host within the cluster. However, the Canvas Server still maintains the same **Host Name** and **IP Address**. Once the new Canvas Server restarts, all the active Canvas Clients automatically reconnect.

## A—Canvas Server High Availability (HA)

---

# Failover between data centers



**Figure A.1 - Failover within a Data Center**

## A.2 Failover Between Data Centers

Perform the following to manage Failover between Data Centers:

1. Create a VMware snapshot of the Canvas Server.
2. Back up the Canvas Server data files periodically (hourly, daily, etc.) and copy the backed up data files to the Backup Data Center.
3. If the Primary Data Center fails, manually bring up the Canvas Server in the Backup Data Center from the snapshot and restore from the backed up data files.
4. Manually update DNS to point to the IP address of the new Canvas Server. Active Canvas Clients will automatically connect to the new server in the Backup Data Center.

## A—Canvas Server High Availability (HA)

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**Note** In order to revert to the Primary, reverse this process.

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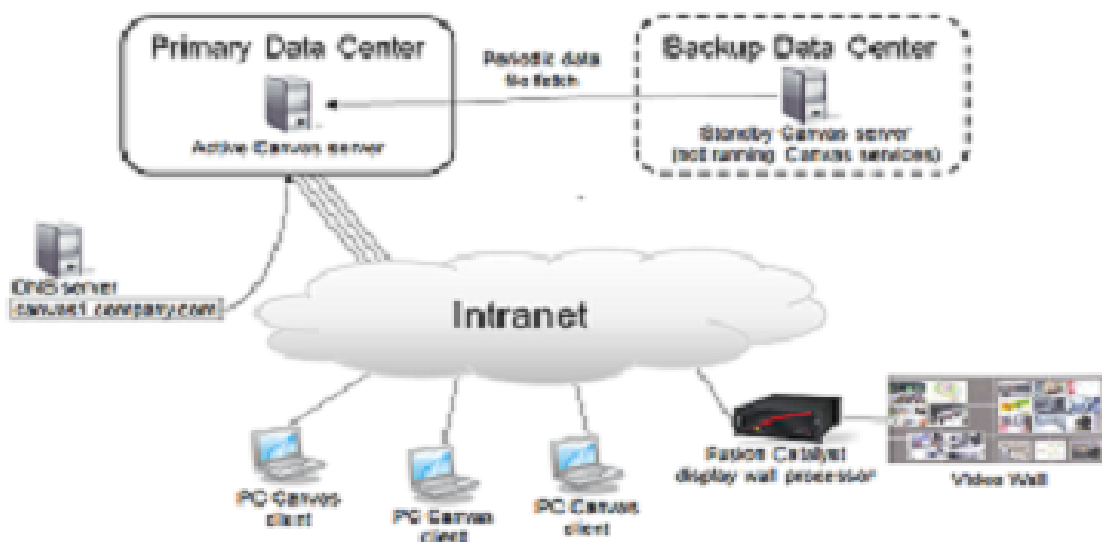
### A.3 Commands

**BackupCanvas** and **StartCanvas** commands are used to configure and enable High Availability. The executables, **BackupCanvas.bat** and **StartCanvas.bat**, are located on the Server Install disk under **Server>Utilities>CanvasHA**.

#### A.3.1 BackupCanvas <servername> [<timeout>]

This command is run on a Canvas Server to turn it into a backup for the indicated server name (this is the **Backup Data Center** in the figure below). It stops the Canvas Windows service and backs up the indicated Canvas Server to the local Canvas Server every <timeout> seconds (defaults to 300 seconds). The command does not automatically restart if the server is restarted—in this case, the last backup copied will not be overwritten with a new copy until the command is restarted.

## Failover between data centers



**Figure A.2 - Fail over Between Data Centers**

## A—Canvas Server High Availability (HA)

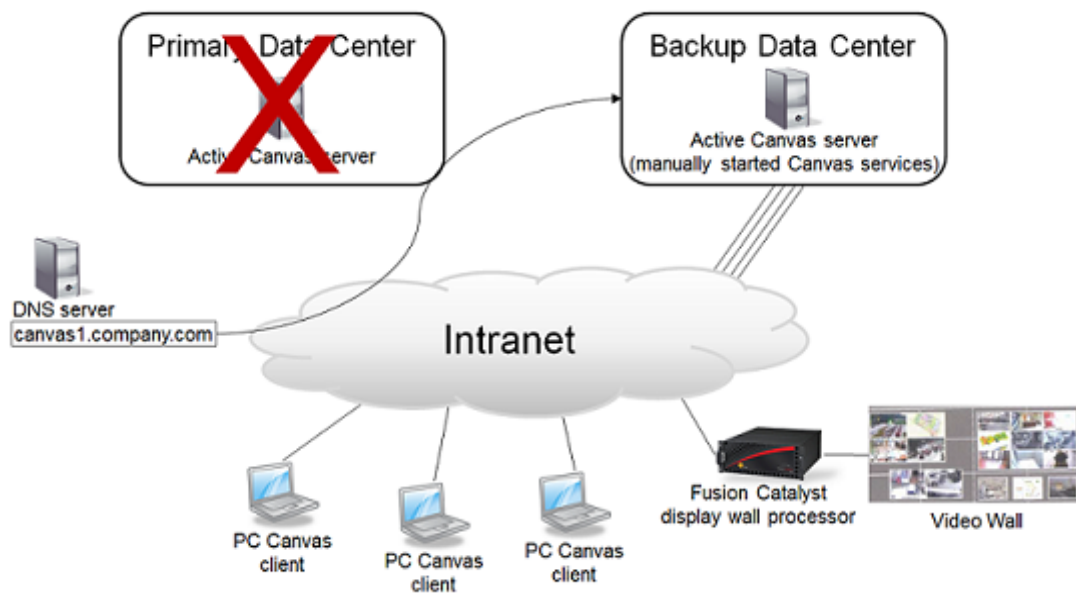
---

### A.3.2 StartCanvas

This command is run on a backup Canvas server (running BackupCanvas) to stop the backup script and start the Windows Canvas service. The backup script will be stopped automatically when this command is run.

The following figure depicts the scenario where the backup takes over as the Primary Server when the **StartCanvas** command is run to manually start the Canvas Services:

## Failover between data centers



**Figure A.3 - Backup Server takes over as Primary**

## A—Canvas Server High Availability (HA)

---

### A.4 Using the Commands

1. Install Canvas on two servers, including separate but equivalent license files.
2. Create a file share on the Active Server, sharing `C:/ProgramData/Canvas/Server` as `//servername/Server`
3. On the backup Canvas Server, run **BackupCanvas** as `<local admin>` specifying the active server to be backed up (and the backup interval)
4. If the Active Server fails, run **StartCanvas** as `<local admin>` on the Backup.
5. When the Active Server is restored, make it the Standby by repeating steps 2-3.

### A.5 Notes

- The BackupCanvas and StartCanvas commands preserve the Licensing information on the Backup Server.
- The Standby Canvas Server is installed and provisioned with its own license file.
- In “standby mode”, the Standby Server is not running any Canvas services.
- Jupiter will provide a script to run on the Standby Server that fetches data files from a designated Active Server at designated times.
- Jupiter will provide instructions on how to manually start Canvas Services on the Standby Server (in the event the active server fails).
- After the DNS server is updated to point to the newly active (previously Standby) Server, Canvas Clients will connect to this server.
- To switch back, the process is reversed.

## A—Canvas Server High Availability (HA)

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# Appendix B — Supported Video Streams/ IP Video Cameras

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## B. Supported Video Streams/IP Video Cameras

Canvas Hardware and Software decoders generally support any camera that produces an **RTSP** stream using **H.264** or **MPEG4** protocol and most multicast streams. (See [B.3.1 RTSP Streams](#))

Contact Jupiter Support to verify operation of any new IP camera.

### B.1 Supported Video Encoders

Table B.1: Supported Hardware IP Encoder

Company	Encoder	Stream Type	URL
ATX	DigiVu2	MPEG-2 TS H.264TS	UDP RTP Payload = 33
Axis	Q7424-R	H.264	RTSP
Epiphan	Broadcaster VGA DVI	H.264	RTSP
Haivision	Makito X	H.264 MPEG4 H264 TS	RTSP UDP UDP
Impath	i5110	H.264	RTSP
Matrox	Maevex 5100	H.264	RTSP
TKH	Siqura: C40, C50, C60	H.264 MPEG4 ES	RTSP UDP
Vbrick	4200- 6200	H.264 MPEG4 ES	RTSP RTP Payload=96

## B—Supported Video Streams/IP Video Cameras

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### B.2 IP Decoders

#### Supported Streams for IP Decoder:

IP decoder only supports h264 streams. It supports both unicast and multicast streams. The supported Streaming Protocols supported are listed below:

For RTP, TS-over-UDP, and TS-over-SRT streams, the following URL formats can be used:

`rtsp://<IP>/<TEXT>`, where the text defines the stream type or channel. Obtain the URL TEXT options for a specific encoder from the manufacturer.

```
rtsp://@<address>:<video-port>[/  
?<field>=<value>[&<field>=<value>]]  
udp://@<address>:<base-port>  
srt://@<address>:<base-port>
```

### B.3 QuadHDDecoder / Software Decoder

#### B.3.1 RTSP Streams

Canvas software and hardware decoders support **RTSP** streams. RTSP controls media session between endpoints. The streaming protocol used may be **H.264** or **MPEG4**. Most RTSP stream sources default to unicast, but can be setup to encode multicast RTSP streams. Multicasting is recommended when multiple users must view the source.

RTSP URLs have the format:

`rtsp://<IP>/<TEXT>`, where the text defines the stream type or channel. Obtain the URL TEXT options for a specific encoder from the manufacturer.

#### B.3.2 Raw Multicast Streams

The following sections describe how to set up Canvas URLs in the Administration UI to read the supported raw multicast protocols:

1. [B.3.2.1 MPEG-2 ES UDP](#)
2. [B.3.2.2 MPEG-2 ES RTP](#)
3. [B.3.2.3 MPEG-2 T UDP](#)
4. [B.3.2.4 MPEG-4 ES RTP](#)
5. [B.3.2.5 MPEG-4 T RTP](#)
6. [B.3.2.6 H.264 RTP](#)
7. [B.3.2.7 MPEG-4 ES UDP](#)
8. [B.3.2.8 H264 TS UDP](#)



## Supported Video Streams/IP Video Cameras

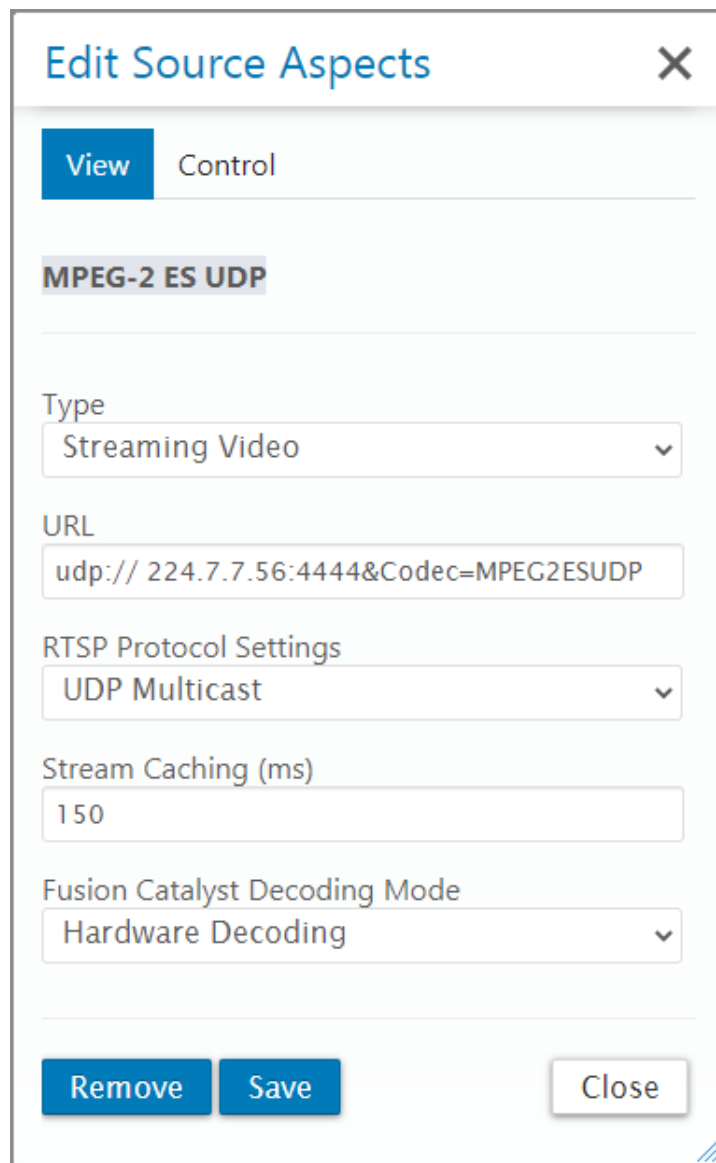
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### 9. [B.3.2.9 H264 TS RTP](#)

Verify that all parameters are entered in the correct order and case. All required parameters are in **red**. The Codec parameter is always required. Sources in Canvas do not support the '@' symbol in the source definition.

These sources are set for **Hardware Decoding** in Catalysts. They default to software decoding in other Canvas Clients.

#### **B.3.2.1 MPEG-2 ES UDP**



The screenshot shows a dialog box titled "Edit Source Aspects" with a close button (X) in the top right corner. Below the title bar, there are two tabs: "View" (selected) and "Control". The main content area is titled "MPEG-2 ES UDP" and contains the following fields:

- Type: Streaming Video (dropdown menu)
- URL: udp:// 224.7.7.56:4444&Codec=MPEG2ESUDP
- RTSP Protocol Settings: UDP Multicast (dropdown menu)
- Stream Caching (ms): 150
- Fusion Catalyst Decoding Mode: Hardware Decoding (dropdown menu)

At the bottom of the dialog, there are three buttons: "Remove", "Save", and "Close".

**Figure B.4 - Quad Decoder MPEG-2 ES UDP**

## B—Supported Video Streams/IP Video Cameras

---

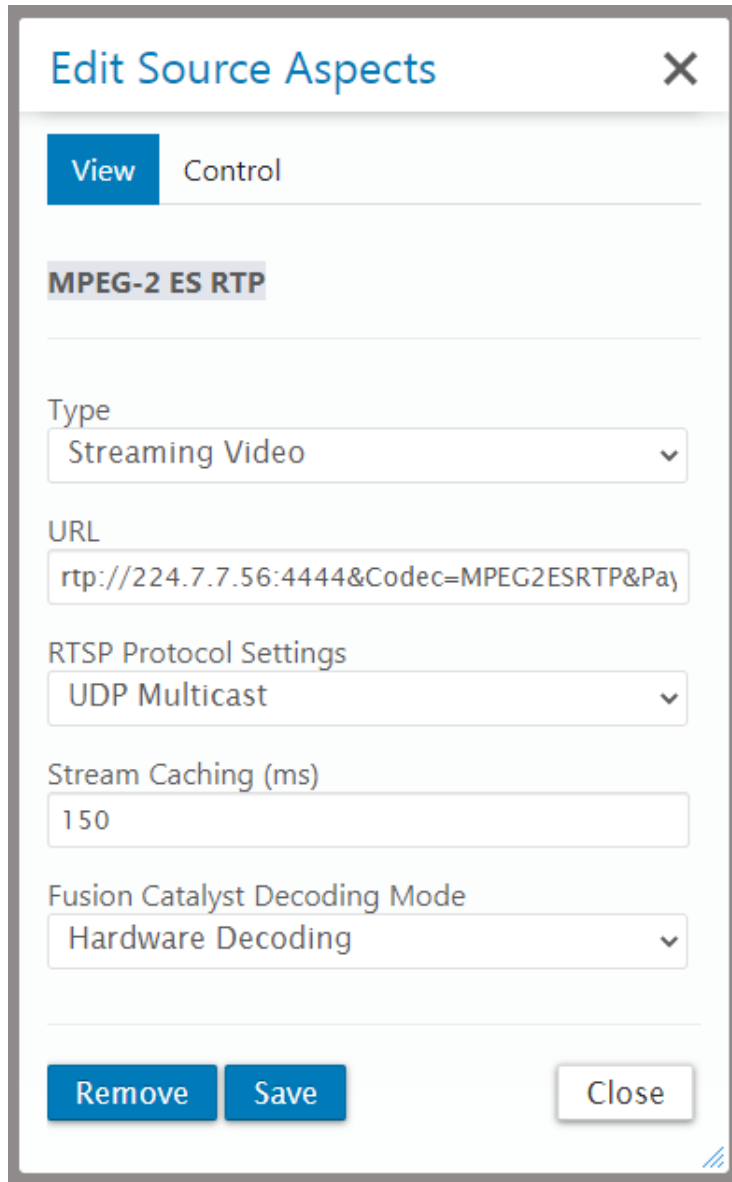
Canvas Example:

udp:// 224.7.7.56:4444&Codec=MPEG2ESUDP

Parameters

Codec (Required) = MPEG2ESUDP

### B.3.2.2 MPEG-2 ES RTP



The screenshot shows a dialog box titled "Edit Source Aspects" with a close button (X) in the top right corner. Below the title bar, there are two tabs: "View" (selected) and "Control". The main content area is titled "MPEG-2 ES RTP". It contains several configuration fields:

- Type:** A dropdown menu set to "Streaming Video".
- URL:** A text input field containing "rtsp://224.7.7.56:4444&Codec=MPEG2ESRTP&Pa)".
- RTSP Protocol Settings:** A dropdown menu set to "UDP Multicast".
- Stream Caching (ms):** A text input field containing "150".
- Fusion Catalyst Decoding Mode:** A dropdown menu set to "Hardware Decoding".

At the bottom of the dialog, there are three buttons: "Remove" (blue), "Save" (blue), and "Close" (white with grey border).

**Figure B.5 - Quad Decoder MPEG-2 ES RTP**

Canvas Example:

## Supported Video Streams/IP Video Cameras

---

rtp://224.7.7.56:4444&Codec=MPEG2ESRTP&Payload=-1&RTCP=False

Parameters

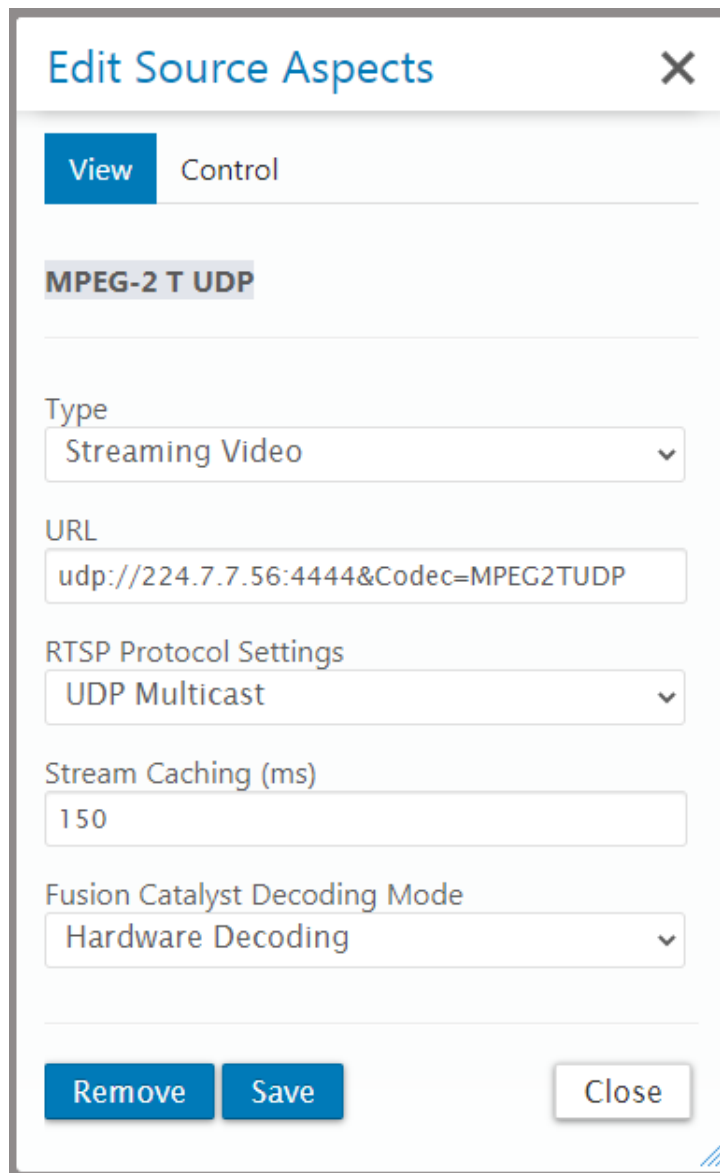
**Codec (Required)** = MPEG2ESRTP

**Payload(Required)** = Integer value.

If no value is entered then the value is 96 or -1

**RTCP (Required)** = True or False

### B.3.2.3 MPEG-2 T UDP



The screenshot shows a dialog box titled "Edit Source Aspects" with a close button (X) in the top right corner. The dialog has two tabs: "View" (selected) and "Control". Below the tabs, the source type is "MPEG-2 T UDP". The "Type" dropdown is set to "Streaming Video". The "URL" field contains "udp://224.7.7.56:4444&Codec=MPEG2TUDP". The "RTSP Protocol Settings" dropdown is set to "UDP Multicast". The "Stream Caching (ms)" field is set to "150". The "Fusion Catalyst Decoding Mode" dropdown is set to "Hardware Decoding". At the bottom, there are three buttons: "Remove", "Save", and "Close".

**Figure B.6 - Quad Decoder MPEG-2 T UDP**

## B—Supported Video Streams/IP Video Cameras

---

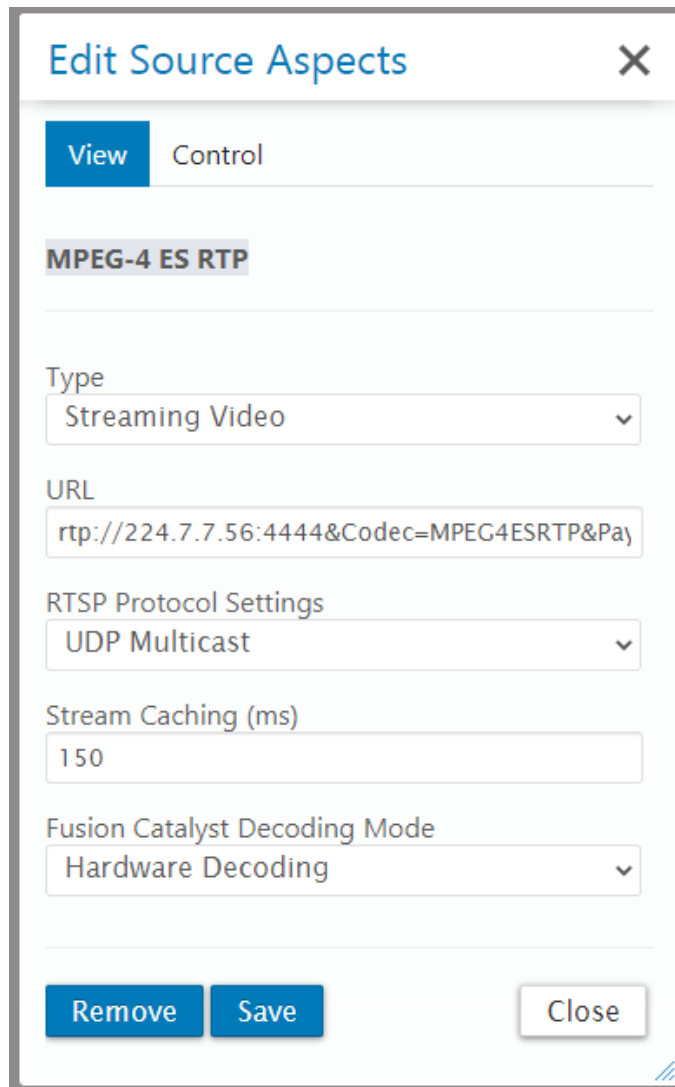
Canvas Example:

udp://224.7.7.56:4444&Codec=MPEG2TUDP

Parameters

Codec (Required) = MPEG2TUDP

### B.3.2.4 MPEG-4 ES RTP



The screenshot shows a dialog box titled "Edit Source Aspects" with a close button (X) in the top right corner. The dialog has two tabs: "View" (selected) and "Control". Below the tabs, the source type is "MPEG-4 ES RTP". The "Type" dropdown is set to "Streaming Video". The "URL" field contains "rtp://224.7.7.56:4444&Codec=MPEG4ESRTP&Pa". The "RTSP Protocol Settings" dropdown is set to "UDP Multicast". The "Stream Caching (ms)" field is set to "150". The "Fusion Catalyst Decoding Mode" dropdown is set to "Hardware Decoding". At the bottom, there are three buttons: "Remove", "Save", and "Close".

**Figure B.7 - Quad Decoder MPEG-4 ES RTP**

Canvas Example:

## Supported Video Streams/IP Video Cameras

---

```
rtp://  
224.7.7.56:4444&Codec=MPEG4ESRTP&Payload=96&RTCP=True&DECOD  
ERCONFIG=fw23gbafsar23423424
```

Parameters

**Codec (Required)** = MPEG4ESRTP

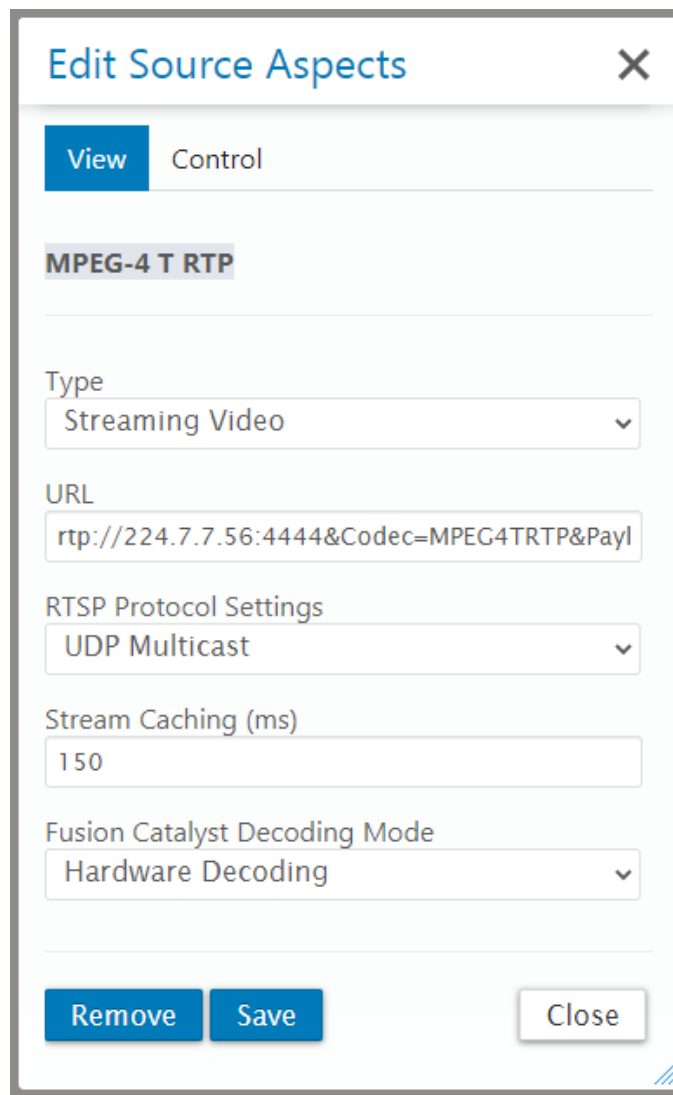
**Payload(Required)** = Integer value.

If no value is entered then the value is 96 or -1

**RTCP (Required)** = True or False

**DECODERCONFIG** (optional) = String value

### B.3.2.5 MPEG-4 T RTP



**Edit Source Aspects** [X]

**View** Control

**MPEG-4 T RTP**

Type  
Streaming Video [v]

URL  
rtp://224.7.7.56:4444&Codec=MPEG4TRTP&Payl

RTSP Protocol Settings  
UDP Multicast [v]

Stream Caching (ms)  
150

Fusion Catalyst Decoding Mode  
Hardware Decoding [v]

Remove Save Close

**Figure B.8 - Quad Decoder MPEG-4 T RTP**

## B—Supported Video Streams/IP Video Cameras

---

Canvas Example:

```
rtp://224.7.7.56:4444&Codec=MPEG4TRTP&Payload=96&RTCP=False
```

Parameters

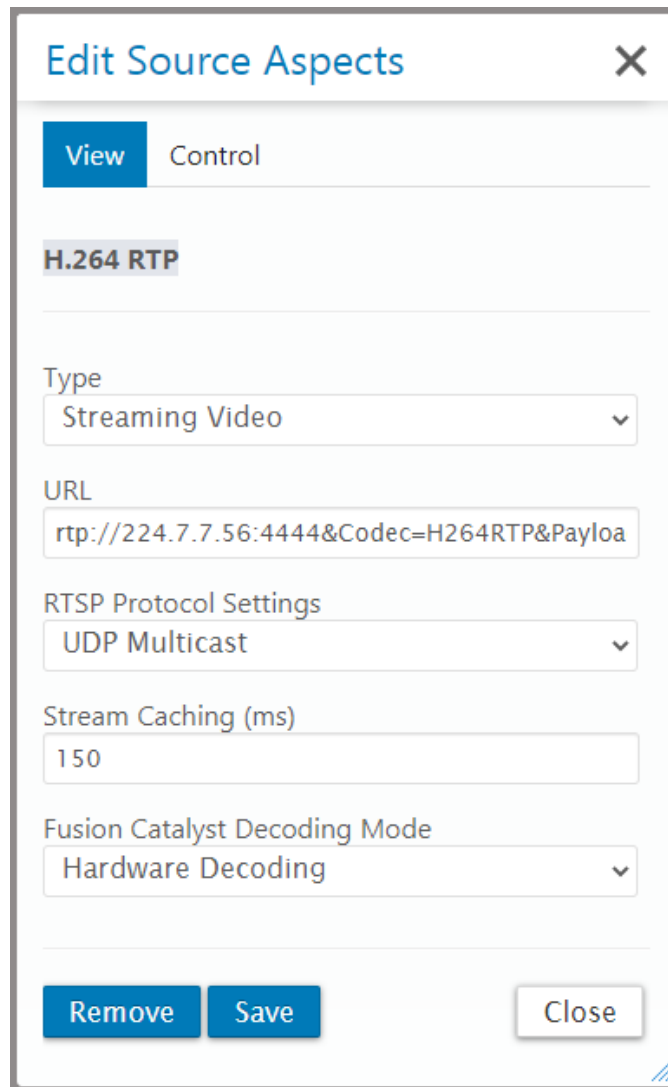
**Codec (Required)** = MPEG4TRTP

**Payload(Required)** = Integer value. If no value is entered then the value is 96 or -1

**RTCP (Required)** = True or False

DECODERCONFIG (optional) = String value

### B.3.2.6 H.264 RTP



The screenshot shows a dialog box titled "Edit Source Aspects" with a close button (X) in the top right corner. Below the title bar, there are two tabs: "View" (selected) and "Control". The main content area is titled "H.264 RTP" and contains several configuration fields:

- Type:** A dropdown menu set to "Streaming Video".
- URL:** A text input field containing "rtp://224.7.7.56:4444&Codec=H264RTP&Payloa".
- RTSP Protocol Settings:** A dropdown menu set to "UDP Multicast".
- Stream Caching (ms):** A text input field containing "150".
- Fusion Catalyst Decoding Mode:** A dropdown menu set to "Hardware Decoding".

At the bottom of the dialog, there are three buttons: "Remove" (blue), "Save" (blue), and "Close" (white with grey border).

**Figure B.9 - Quad Decoder H.264 RTP**

## Supported Video Streams/IP Video Cameras

---

Canvas Example

`rtp://224.7.7.56:4444&Codec=H264RTP&Payload=96&RTCP=True`

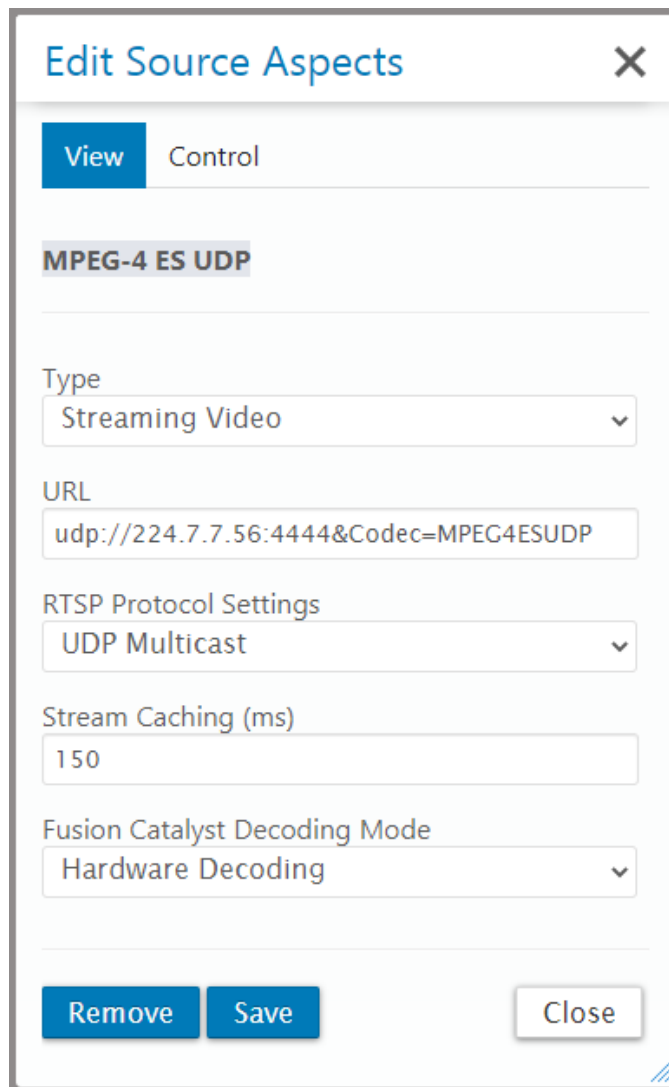
Parameters

**Codec (Required)** = H264RTP

**Payload(Required)** = Integer value. If no value is entered then the value is 96 or -1

**RTCP (Required)** = True or False

### B.3.2.7 MPEG-4 ES UDP



**Edit Source Aspects** [X]

**View** Control

**MPEG-4 ES UDP**

Type  
Streaming Video

URL  
udp://224.7.7.56:4444&Codec=MPEG4ESUDP

RTSP Protocol Settings  
UDP Multicast

Stream Caching (ms)  
150

Fusion Catalyst Decoding Mode  
Hardware Decoding

Remove Save Close

**Figure B.10 - Quad Decoder MPEG-4 ES UDP**

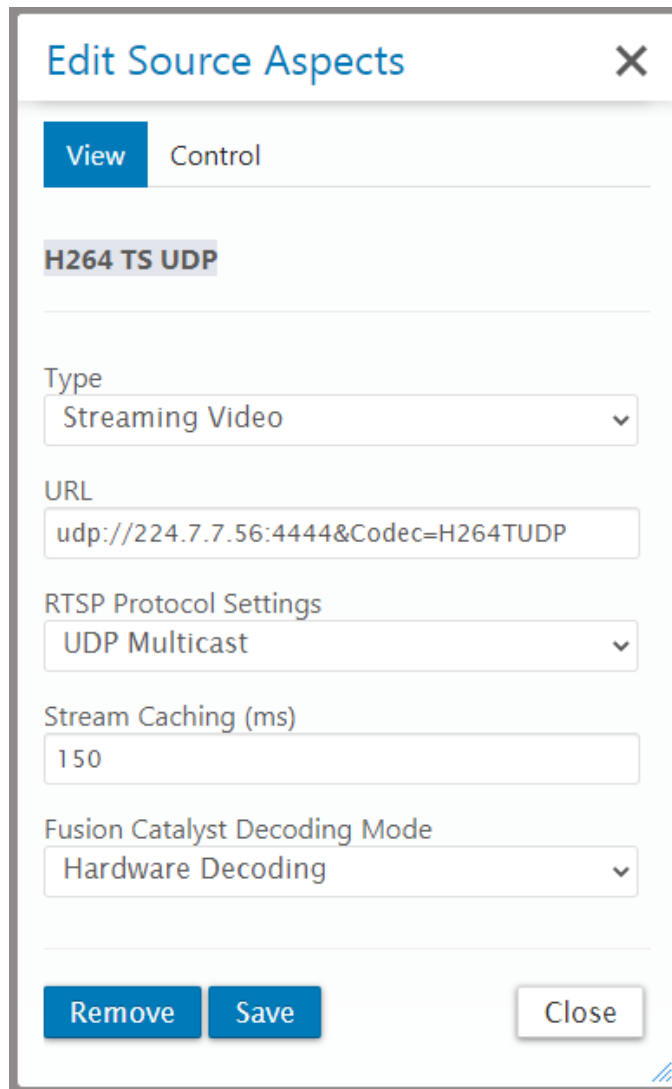
## B—Supported Video Streams/IP Video Cameras

---

Canvas Example  
udp://224.7.7.56:4444&Codec=MPEG4ESUDP

Parameters  
**Codec (Required)** = MPEG4ESUDP

### B.3.2.8 H264 TS UDP



**Edit Source Aspects** [X]

View Control

**H264 TS UDP**

Type  
Streaming Video

URL  
udp://224.7.7.56:4444&Codec=H264TUDP

RTSP Protocol Settings  
UDP Multicast

Stream Caching (ms)  
150

Fusion Catalyst Decoding Mode  
Hardware Decoding

Remove Save Close

**Figure B.11 - Quad Decoder MPEG-4 ES UDP**

Canvas Example  
udp://224.7.7.56:4444&Codec=H264TUDP



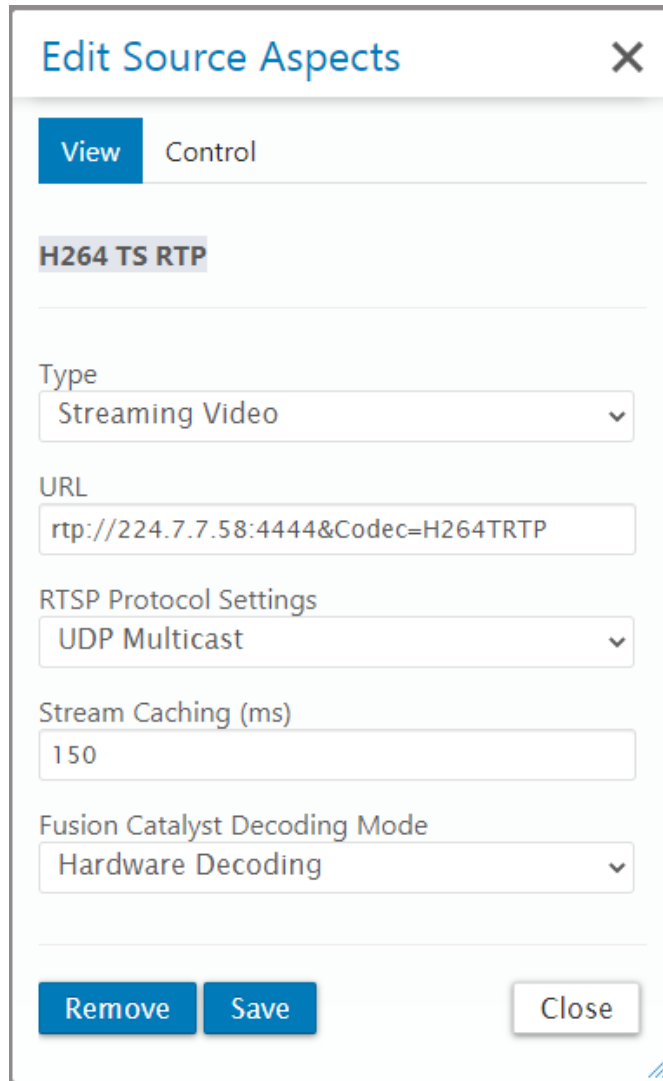
## Supported Video Streams/IP Video Cameras

---

Parameters

Codec (Required) = H264TUDP

### B.3.2.9 H264 TS RTP



The screenshot shows a dialog box titled "Edit Source Aspects" with a close button (X) in the top right corner. Below the title bar, there are two tabs: "View" (selected) and "Control". The main content area is titled "H264 TS RTP" and contains several configuration fields:

- Type:** A dropdown menu set to "Streaming Video".
- URL:** A text input field containing "rtp://224.7.7.58:4444&Codec=H264TRTP".
- RTSP Protocol Settings:** A dropdown menu set to "UDP Multicast".
- Stream Caching (ms):** A text input field containing "150".
- Fusion Catalyst Decoding Mode:** A dropdown menu set to "Hardware Decoding".

At the bottom of the dialog, there are three buttons: "Remove" (blue), "Save" (blue), and "Close" (white).

**Figure B.12 - Quad Decoder H264 TS RTP**

Canvas Example

rtp://224.7.7.58:4444&Codec=H264TRTP

Parameters

Codec (Required) = H264TRTP

## B—Supported Video Streams/IP Video Cameras

---

### B.3.3 Troubleshooting

#### B.3.3.1 QuadIPDecoder

1. Latency issues:

This option will reduce amount of buffering, and try to use the latest frame within that smaller buffer to render.

rtsp://<IP>/video1/\_\_\_instantplay OR

rtsp://<User>:<Pswd>@<IP>/video1/\_\_\_instantplay (note two underscores)

#### B.3.3.2 SwDecoder

1. accelerated video playback followed by stalling in video.

This may happens if the source stream is sent in bursts over the network. Generally happens on file sources over network. The \_\_\_noRealTime switch forces the playback to occur at the frame timestamp, rather than lowest latency setting (which is the most recent frame over network).

Example:rtsp://<IP>/video1/\_\_\_noRealTime OR

rtsp://<User>:<Pswd>@<IP>/video1/\_\_\_noRealTime

2. Drifting/Latency issues.

The \_\_\_noaudio switch causes the decoder to forcibly ignore audio packets. This may fix issues in some encoders which generates erroneous/bad audio packets, even in cases where there's no audio present.

Example:rtsp://<IP>/video1/\_\_\_noaudio OR

rtsp://<User>:<Pswd>@<IP>/video1/\_\_\_noaudio

3. Audio Video Sync drifting significantly apart

The \_\_\_resync option will forcibly implemetns AV resync at the video packet intervals. This will generally eliminate AV drifting, but AV sync might be +/- a few frames apart. Used only if nothing else works.

Example:rtsp://<IP>/video1/\_\_\_resync OR

rtsp://<User>:<Pswd>@<IP>/video1/\_\_\_resync

4. Motion artifacts.

## Supported Video Streams/IP Video Cameras

---

This is generally caused by interlaced sources. For interlaced encoded stream, the deinterlaced can be enabled to reduce motion artifacts. There are 3 possible selections:-

a. Blending/Weaving (Weave and blend 2 half frames into a single frame): (most expensive in terms of CPU)

rtsp://<IP>/video1/\_\_deintBlend OR

rtsp://<User>:<Pswd>@<IP>/video1/\_\_deintBlend (note two underscores)

b. line doubling: (line double each half frame)

rtsp://<IP>/video1/\_\_deintBob OR

rtsp://<User>:<Pswd>@<IP>/video1/\_\_deintBob (note two underscores)

c. discard: (discard every other half frame.) (cheapest in terms of CPU. For slower computers, use this.)

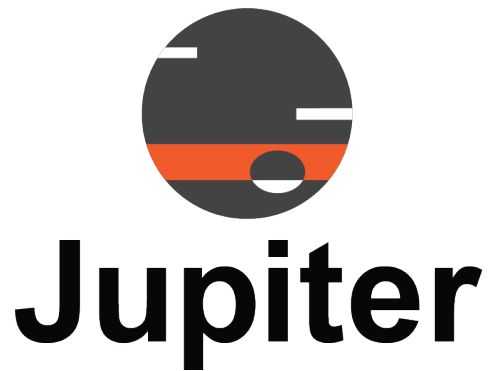
rtsp://<IP>/video1/\_\_deintDiscard OR

rtsp://<User>:<Pswd>@<IP>/video1/\_\_deintDiscard

## Appendix B—Supported Video Streams/IP Video Cameras

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## Appendix C — VNC for Canvas

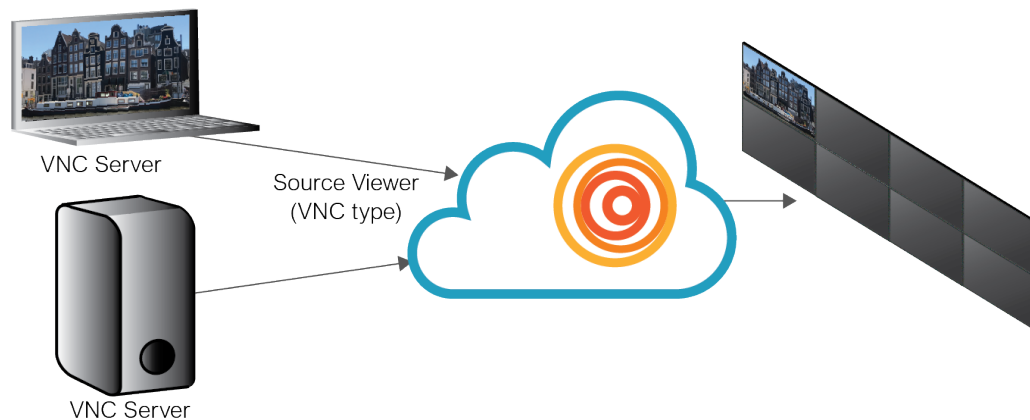
---

### C. VNC for Canvas

In the Canvas environment Virtual Network Computing (VNC) is used so that a PC or laptop can share its screen with the Canvas environment and that video source be put up on a video wall or other Canvas output device. This also means that a server with or without a monitor can be viewed and controlled through the VNC server.

VNC software provides secure cross-platform screen sharing so that a remote computer can be seen and controlled from another computer.

**Figure C.1 - Canvas with VNC**



Canvas has its own built-in VNC viewer. What this means is when you select Type VNC in Edit Source Aspects you can access the Real VNC server from another device.

Jupiter Systems tests the Canvas environment with Real VNC Server and recommend using Real VNC.

## C.1 System Requirements

### C.1.1 Anti-Virus Software

Disable all anti-virus software. These applications may be re-enabled after the VNC software is installed.

### C.1.2 One VNC Server Running

Only one type of VNC service should be running in the VNC Server machine.

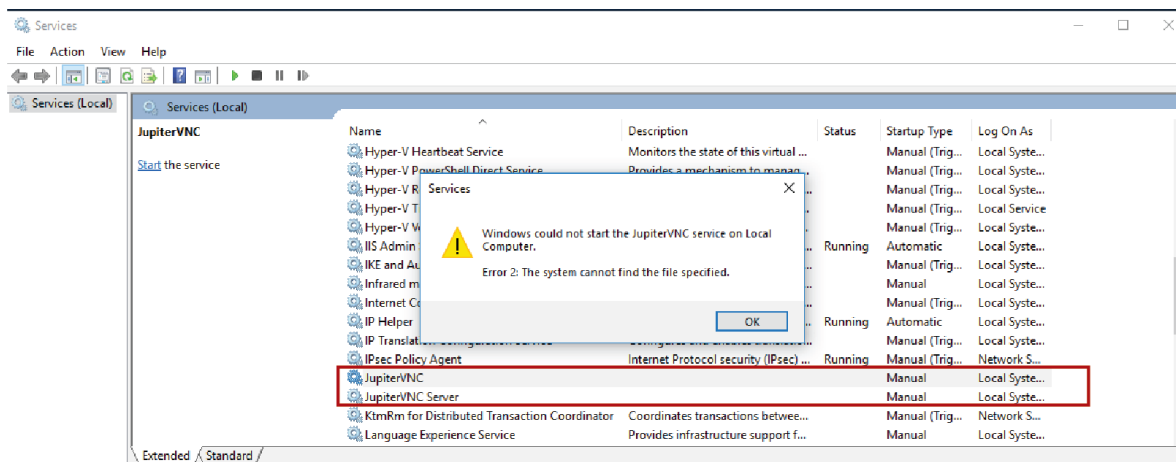
## C.2 Getting Started with Real VNC

If you have existing Jupiter VNC and Jupiter VNC Server on the target PC, you need to remove them before installing Real VNC.

### C.2.1 Removing Jupiter VNC and Jupiter VNC Server

1. If Jupiter VNC and Jupiter VNC Server services failed to uninstall use the follow commands to remove them

**Figure C.2 - Jupiter VNC and Jupiter VNC Server in Services**



2. Open the command prompt
  - a Right click the Windows Start flag in the lower left corner of the screen and select **Run**
  - b In the Run dialog box enter cmd in the Open text box
  - c Click **OK**
3. Enter command to remove Jupiter VNC and click Enter  
`sc.exe delete JupiterVNC`
4. Enter command to remove Jupiter VNC Server and click **Enter**

```
sc.exe delete jupvnservice
```

5. Restart the PC

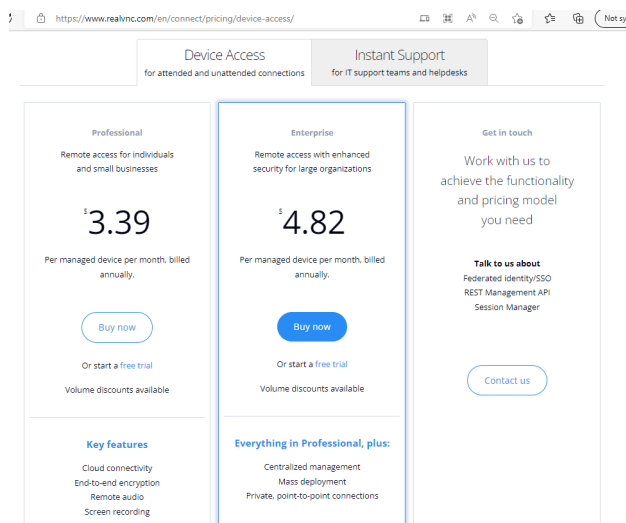
## C.2.2 Install Real VNC

You need to purchase Real VNC for Enterprise

1. Download Real VNC Enterprise from the Real VNC Website

Go to <https://www.realvnc.com/en/connect/pricing/device-access/> and select **Enterprise** and click **Buy Now**.

**Figure C.3 - Select Enterprise version**



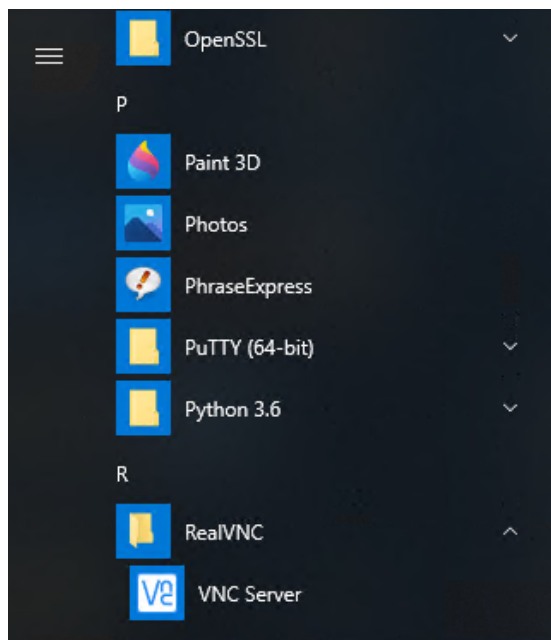
2. Follow the installation directions from the Real VNC Website/ Installer
3. In the **Add a VNC Server firewall exception** screen make sure **Add an exception to the firewall for VNC Server** is checked **Add an exception to the firewall ...** is checked by default.
4. Activate the Real VNC license  
There are two ways to activate the licensing in Real VNC. For Canvas you need to register offline by clicking **Register offline** and entering the license key you receive from Real VNC when you buy the license.
5. Complete the VNC install process

### C.2.3 Configure Real VNC

1. Open Real VNC

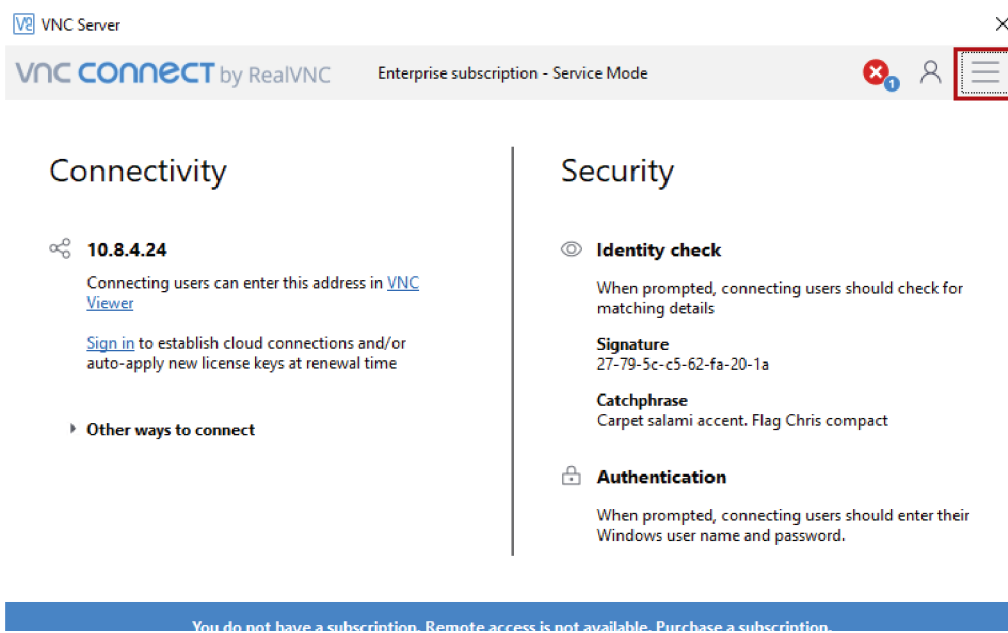
Click **Start Menu | Real VNC | VNC Server**

**Figure C.4 - Real VNC in menu**



2. Open menu (hamburger icon) and click **Options**

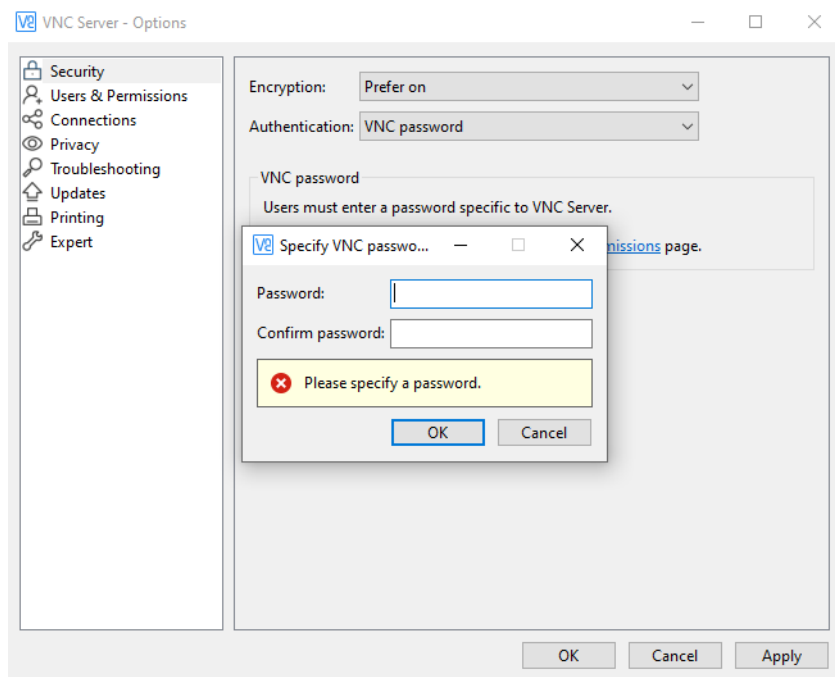
**Figure C.5 - Real VNC settings startup screen**





3. Select "Prefer On" from the **Encryption** drop-down and "VNC Password" from the **Authentication** drop-down

**Figure C.6 - VNC Server Options**



**NOTE:** Jupiter recommends using the default settings and turning off Real VNC features which are not needed for the Canvas use.

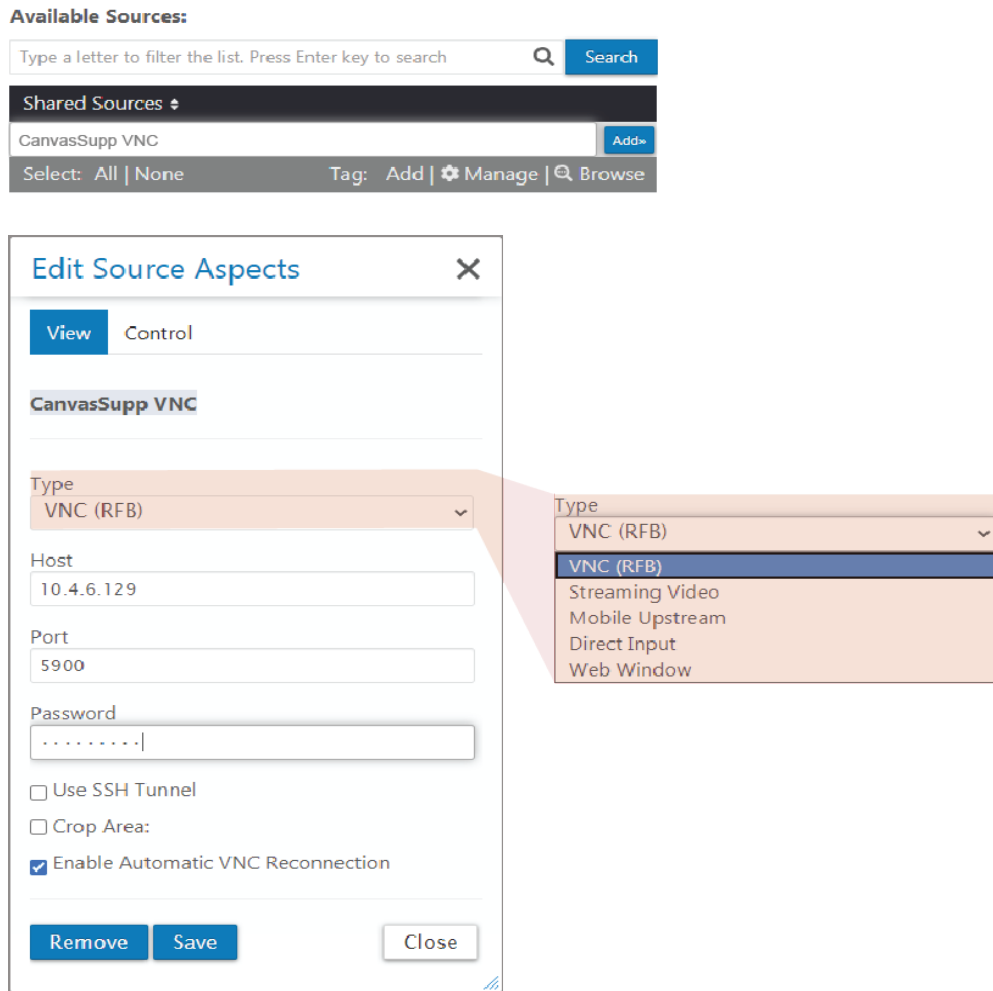
### C.2.4 Real VNC with Canvas Source Example

From Canvas you add the Source and select VNC as the Type, Selecting VNC engages Canvas' built-in VNC viewer.

1. Go to the **Admin UI** page, click the **Shared Sources** tab, then click the + icon
2. In the field that appears, enter a unique name and then click the green **Add** button
  - VNC (RFB)** selected by default under **Type**
3. Enter the **Hostname** or **IP address** of the VNC Server
4. Leave the default **Port 5900** as is
5. Enter the password of the Real VNC Server
6. Click **Save**

See [Section 6.2.2 Adding Sources](#) on page 145.

Figure C.7 - VNC access to Shared Source



## C.3 SSH with Real VNC

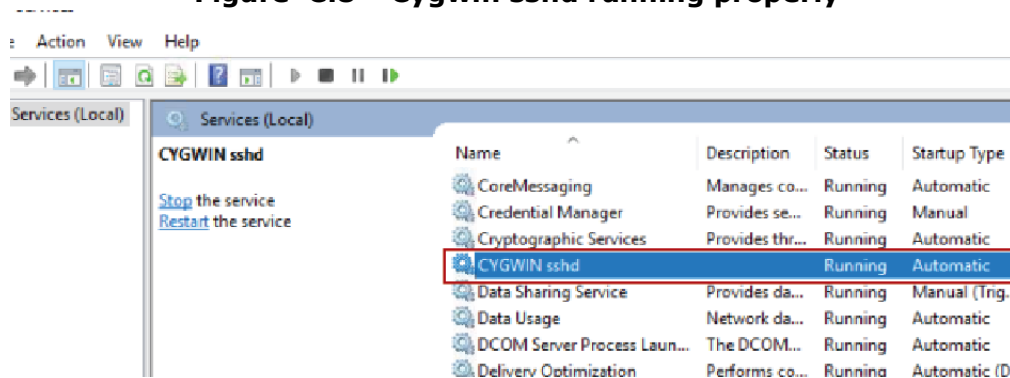
The VNC Server and VNC Viewer communication uses Secure Shell Protocol (SSH) to connect an SSH client (Canvas) with an SSH server.

### C.3.1 Install SSH Server

1. Copy the SSH installer to the Desktop from Canvas\_7.0 ISO image. (Example: C:\Users\Jupyter\Desktop\Canvas\_7.0\Utilities\Client\SshServer).
2. Double click **SSH Server**
3. Follow the directions from the Installer
4. Once installation is completed check that the SSH Server installed correctly

Open Window's Services and look for **CYGIN sshd** and verify it is running.

**Figure C.8 - Cygwin sshd running properly**



The CYGIN sshd status should be Running. If it is not, select the file and click Start the service.

### C.3.2 Configure SSH

1. On the computer running the Real VNC Server, go to the following directory: C:\Program Files (x86)\SshServer\cygwin64\_openssh
2. Run Cygwin.bat as an Administrator  
It opens a Bash shell window.
3. Once the Bash shell window opens, use the following commands to make changes

**To add a local user**

---

```
mkpasswd -l -u [USERNAME] >> /etc/passwd
```

**Example**

If hostname is VNCServer01 and username is John, the new SSH username will be VNCSEVER01+John. If a false USERNAME is entered in the mkpasswd command, the command will be ignored and no error message will be generated.

**To add a single domain user**

```
mkpasswd -d {DOMAIN} -u [USERNAME] >> /etc/passwd
```

Only the username is used – the domain name is ignored.

**Example**

If domain is JUPITER and username is John, the new SSH username will be John. If a false USERNAME is entered in the mkpasswd command, the command will be ignored and no error message will be generated.

### C.3.3 Open SSH Server

The OpenSSH Server package creates three Windows user logins:

- sshd\_login,
- sshd\_user,
- sshd

These three accounts need to be present for Canvas encryption to work, so ensure that they are not removed as local users.

The sshd\_login account has the default password jupiter. Change this password to something unique for your organization via the computer's local Users and Groups dialog box.

Afterwards, use this password in the VNC SSH Properties

### C.3.4 Adding/Modifying SSH Server Users

Canvas encryption uses the Cygwin application to allow SSH on Windows. This application is installed on the Catalyst system as on a desktop machine.

Administrators can add usernames to the Cygwin database if they prefer to use something other than sshd\_login.

---

**Note:** it is recommended to use Local User or Domain User for SSH authentication.

---

---

### C.3.5 Real VNC with SSH Example

Like using VNC from Canvas you add the Source and select VNC as the Type, but within the **Edit Source Aspects dialog** you then check Use SSH Tunnel to open the encrypted access.

1. Go to the **Admin UI** page, click on **Shared Sources** tab, then click the + icon
2. In the field that appears, enter a unique name for the **New Source**, then click Add  
**VNC (RFB)** selected by default under **Type**
3. In the **Edit Source Aspects dialog** pick VNC (RFB) from the Type drop down menu
4. Enter the **Hostname** or **IP address** of the VNC Server
5. Leave the default **Port 5900** as is  
The **Port** field shows the default of 5900. This may be changed to avoid port conflicts with other applications.
6. Enter the password of the Real VNC Server
7. Check **Use SSH Tunnel**
8. Enter the **SSH Password**  
The SSH password is the password for your Local or Domain accounts.
9. Click **Save**

**Figure C.9 - VNC with SSH Tunnel**

Available Sources:

Type a letter to filter the list. Press Enter key to search

Shared Sources **+**

VNC Server 01 SSH

Select: All | None Tag: Add |

**Edit Source Aspects**

**VNC Server 01 SSH**

Type  
VNC (RFB)

Host

Port

Password

Use SSH Tunnel

SSH Port

SSH Username

SSH Password

Crop Area:

Enable Automatic VNC Reconnection

Type  
VNC (RFB)   
VNC (RFB)  
Streaming Video  
Mobile Upstream  
Direct Input  
Web Window

# Appendix D— Canvas Open Ports

---

## D. Canvas Open Ports

### D.1 Open Server Ports

The following table provides the port assignment and direction to and from the Canvas Server.

**Table D.1: List of Canvas Server Ports**

.exe Process to Allow	Port	TCP/UDP	Inbound/Outbound	Description
w3wp.exe (IIS)	80	TCP	Inbound and Outbound	HTTP Canvas Web Server for Canvas Admin UI and Web Client webpages
w3wp.exe (IIS)	443	TCP	Inbound and Outbound	HTTPS Canvas Web Server for Canvas Admin UI and Web Client webpages
w3wp.exe (IIS)	808	TCP	Inbound	Standard Shared Data Service Port for .NET WCF (needed by Canvas Client apps)
SharedObjectService.exe	3702	UDP	Inbound and Outbound	Canvas Server WCF Data Services
SharedObjectService.exe	8000	TCP	Inbound and Outbound	Canvas Web Server WCF Data Services
w3wp.exe (IIS)	8043	TCP	Inbound	To Canvas Web Server for Web Client from Canvas Mimic Servers
SharedObjectService.exe	8523	TCP	Inbound	Canvas Server WCF Data Services

---

**Caution:** Firewall Restrictions cannot be based on the **Source Ports** as they are **Dynamically Allocated**.

---

## D—Canvas Open Ports

### D.2 Open Client Ports

The following table provides the port assignment and direction to and from the Canvas Client host machine.

**Table D.2: List of Canvas Client Ports**

exe. Process to Allow	Port	TCP/UDP	Inbound/Outbound	Description
Windows OS	53	TCP/UDP	Outbound	To DNS server
Canvas.Client.exe	80	TCP	Outbound	To Canvas Server (basic client operation)
"Mimic.Proxy.exe (If Enabled)"	80	TCP	Inbound	To the Mimic Server Proxy (If ""Canvas Mimic Server Proxy"" Service is Running)"
VideoDecoder.exe	80	HTTP	Outbound	HTTP video source
Windows OS	135	TCP/UDP	Outbound	To Active Directory
"Canvas.Client.exe Mimic.Server.exe"	443	TCP	Inbound and Outbound	To/from Canvas Server
Node.exe	554	TCP	Inbound	From Canvas Clients for Canvas SimpleShare
VideoDecoder.exe	554	TCP	Outbound	RTSP video source
w3wp.exe (IIS)	808	TCP	Outbound	Standard Shared Data Service Port for .NET WCF (needed by Canvas Client apps)
crsturnserver.exe	3478	TCP	Inbound	For TurnServer
RFBMemClient.exe	5900	TCP	Outbound	To VNC Server
VNCserver.exe	5900	TCP	Inbound	From VNC Client (if acting as a VNC source)
Mimic.Server.exe	8043	HTTPS	Inbound	To Client Mimic
w3wp.exe (IIS)	8043	HTTPS	Outbound	To Remote Client Mimics from Client Webapp
CanvasShell.exe	8080	HTTP	Outbound	To Remote Client Mimics
Mimic.Server.exe	8080	HTTP	Inbound	To Client Mimic
Node.exe	8081	TCP	Inbound and Outbound	WebSocket for Canvas SimpleShare
Node.exe	8444	TCP	Outbound	For Mimic Communication



## D—Canvas Open Ports

**Table D.2: List of Canvas Client Ports (Continued)**

<b>exe. Process to Allow</b>	<b>Port</b>	<b>TCP/UDP</b>	<b>Inbound/Outbound</b>	<b>Description</b>
CanvasShell.exe	8523	TCP	Outbound	To Remote Canvas Server (Data Services)
VideoDecoder.exe	8554	TCP	Outbound	RTSP video source (8554 is "alternate" RTSP port)
Galcon.exe (If Installed)	9388	TCP		Galileo Connect with Mimic Proxy
RCServer.exe	21059	TCP	Inbound	For Remote Cursor from remote Canvas Client Workstation
"C2C.exe (If Enabled)"	25456	TCP	Inbound	"Tor Mimic Server API commands from terminal emulator (Telnet) (If ""Canvas API Service"" Service is Running)"

## D—Canvas Open Ports

---

### D.3 Jupiter Mobile Server Ports

The following table provides the port assignment and direction to and from the Jupiter Mobile Server.

**Table D.3: List of Jupiter Mobile Server Ports**

<b>.exe Process to Allow</b>	<b>Port</b>	<b>TCP/UDP</b>	<b>Inbound/Outbound</b>	<b>Description</b>
mediasoup-worker.exe	10000-14999	TCP/UDP	Inbound/Outbound	Transport of mobile webrtc stream
node.exe	4000	TCP	Inbound	REST API for signaling
gst-launch-1.0.exe	554	TCP	Outbound	RTSP for downstream ingress
gst-launch-1.0.exe	16384 - 32767	TCP	Inbound	Standard RTP port range for downstream Ingress

# Appendix E— Self-Signed Security Certificates

---

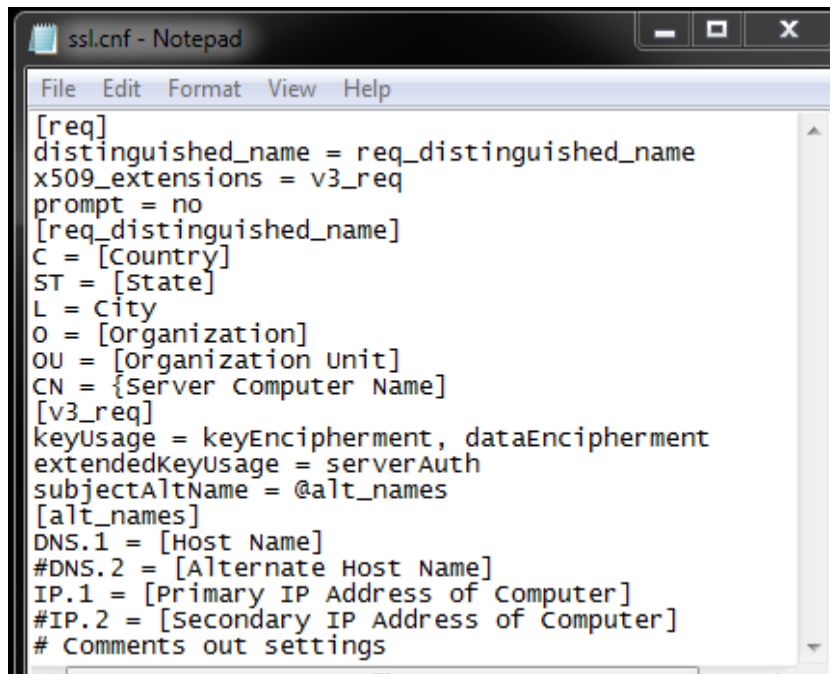
## E. Self-Signed Security Certificates

A default self-signed certificate is installed at the factory. If this is used by the customer, a security warning message appears when opening the **Administration UI**. This procedure is used to avoid this message by generating and installing certification files on the Canvas Server, Canvas Client and CRS-5K.

### E.1 Generating a Self-Signed Certificate on the Canvas Server

On the Canvas Server Install CD:

1. Copy the **Canvas x.x:\Server\Utilities\CertGen\** folder onto your system.
2. Open the certificate file, **ssl.cnf**, with **NotePad**  
Edit it as shown below:



```
ssl.cnf - Notepad
File Edit Format View Help
[req]
distinguished_name = req_distinguished_name
x509_extensions = v3_req
prompt = no
[req_distinguished_name]
C = [Country]
ST = [state]
L = City
O = [Organization]
OU = [Organization unit]
CN = {Server Computer Name}
[v3_req]
keyUsage = keyEncipherment, dataEncipherment
extendedKeyUsage = serverAuth
subjectAltName = @alt_names
[alt_names]
DNS.1 = [Host Name]
#DNS.2 = [Alternate Host Name]
IP.1 = [Primary IP Address of Computer]
#IP.2 = [Secondary IP Address of Computer]
# Comments out settings
```

## E—Self-Signed Security Certificates

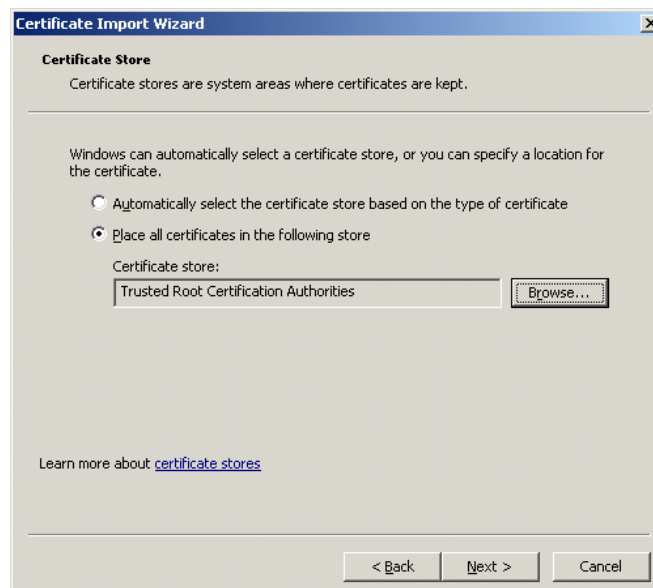
---

### Appendix E Figure 1 - Edit ssl.cnf

3. Save the **ssl.cnf** file.
4. Double click on the CertGen.bat file.
5. The batch file will generate a **certificate.pfx** file in the **CertGen** folder.
6. Go to [Section 38 Importing the Encryption Certificate on page 38](#), and import the certificate.pfx file to the **Canvas Server**.

### E.2 Self-Signed Certificate on a Canvas PC Client

1. Copy the **certificate.pfx** from the **Canvas Server** onto the PC **Canvas Client desktop**.
2. Open the folder and double left-click on the **certificate.pfx** file.
3. The **Certificate Import Wizard** will open.
4. Specify the location of the **certificate.pfx** file in **File Name**.
5. Type in a Password and leave the default option **Include all extended properties** checked. Click **Next**.
6. Push the button **Place all certificates in the following store**.
7. Select **Trusted Root Certification Authorities** and click **Next**



**Figure E.1 - Select Certificate Store**

8. Click **Finish**. The certification has been successfully imported.

# Chapter F

## —Canvas Source Object Files

---

### F. Canvas Source Object Files

An import of ControlPoint object data may be edited or a new file created in Excel. See [Section F.4 Importing ControlPoint Sources](#) for information on creating and uploading this file. A Canvas Object.csv file may be created with a spreadsheet. The columns on the Excel spreadsheet have a unique meaning for each type of source.

#### F.1 Object Types

Table F. 1: Canvas Source Object Types

Type Name	Shared Source	Local Source
Streaming	X	
VNC	X	
DVI		X
DVI_STREAMING	X	
Web		X
WEB_STREAMING	X	
Application		X
Text		X
Clock		X
Image		X

## F—Canvas Source Object Files

---

### F.2 Canvas Object String Definitions

The column definitions for each type of source and examples are shown below. Columns with optional data are shown as (data).

#### F.2.1 Streaming Video

Type, Name, (Host), URL, RTSP Protocol, MultiCast, (Stream Caching), (FusionCatalyst Decoding Mode)

Examples:

Streaming, Axis P1347 multi, , rtsp://root:jupiter@10.4.9.4/axis-media/media.amp, UDP, true

Streaming, Impath i5110 mpeg2 ES UDP, , rtp://224.1.0.1:7100&Codec=MPEG2ESRTP&Payload=32RTCP=False, UDP, true

#### F.2.2 VNC

Type, Name, Host, Server Address, Password, Allow Control, Crop Left, Crop Top, Crop Width, Crop Height, Use Ssh Tunnel, SSH UserName, SSH Password, SSH Port, Enable Automatic VNC Reconnection"

Example:

VNC, AppName, Hostname, 10.7.1.10, jupiter, true,0,0,0,0,0, true, VNC+sshd\_login, nhRiQ9DTIOY1t7E57VIC8w==:h5YFKqJ/Udg=:GCNwfjCiOUJYI9KZpdaz+Q==, 22, true

#### F.2.3 DVI (For Direct Input)

Type, Name, Host, Direct Input Channel Number, DualLink, Component, Crop Left, Crop Top, Crop Width, Crop Height, Brightness, Contrast, AutoDetectEnabled, HorizontalTotal, HorizontalOffset, HorizontalWidth, VerticalTotal, VerticalOffset, VerticalHeight, Phase, Frequency, SyncType, HSyncNeg, VSyncNeg, Valid, (FontColor), (FontFamily), (FontSize), (FrameColor), (FrameWidth), (ShowFrameAndTitle), (ShowTitleText), (TitleBarMinHeight), (TitleHAlign), (TitlePosition), (TitleText), (TitleVAlign)

Example:

DVI, My Direct input, HostName, 11, false, false, 0, 0, 0, 0, 0, 1, 0, 0, true, 0, 0, 0, 0, 0, 0, 59, 0, false, false, false

#### F.2.4 Web

Type, Name, Host, URL, KeepAlive, ZoomPercentage, ScrollOffsetLeft, ScrollOffsetTop, EnableAutoRefresh, RefreshIntervalSeconds, BlockPopupWindow, Redirect, (FontColor), (FontFamily), (FontSize), (FrameColor), (FrameWidth), (ShowFrameAndTitle), (ShowTitleText), (TitleBarMinHeight), (TitleHAlign), (TitlePosition), (TitleText), (TitleVAlign)

Example:



## F—Canvas Source Object Files

### F.3 Canvas Source Batch Files

Importing a **Canvas Object** file into Canvas creates **Canvas Sources**. A **Canvas Object** file can be created in Excel to set up a large number of **Canvas Sources** instead of using the **Administration UI**.

#### F.3.1 Creating a Canvas Source Batch File

1. Open an **Excel** spreadsheet and edit the first line to label the **Canvas Source Object** file:  
 1st field = **Mimic**  
 2nd field = [Name of Mimic Source in Canvas]  
 3rd field = [**Catalyst, CRS-5K** or Host Name]
2. Add a line for each desired source. Use the string definitions in [Section F.1 Object Types](#) to define the fields.
3. If you need to create multiple similar sources, copy a line, duplicate it as many times as needed, then edit each line for parameter differences.
4. Save the **Object** file in .csv format.
5. Copy the **Object.csv** file to an external storage device.
6. If the sources are from ControlPoint go to [Section F.4 Importing ControlPoint Sources](#).

#### F.3.2 Canvas Source Batch File Example

A sample Canvas Source Batch file open in Excel is shown below:

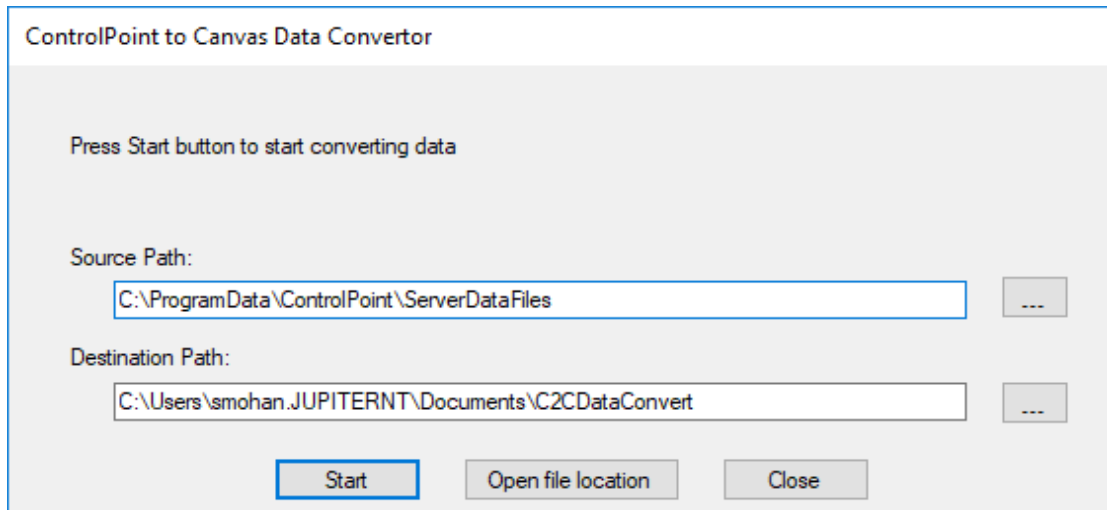
mimic	Mimic 4500ULT-Supp	4500ULT-Supp	
Streaming	Axis P1347 multi		rtsp://root:jupiter@10.4.9.4/axis-media/media.amp
Streaming	Dlink Production	4500ULT-Supp	rtsp://10.2.0.147/live3.sdp
Streaming	10.4.194.2 rtsp 800x600	ADESKTOP	rtsp://root:jupiter@10.4.194.2/axis-media/media.amp
VNC	PC1	PC1	10.7.1.10
VNC	CanvasSupport Lab	4500ULT-Supp	10.7.1.215
DVI	local DVI input 2	4500ULT-Supp	2
DVI_STREAMING	DVI 2	4500ULT-Supp	2
Web	local Yahoo object	4500ULT-Supp	www.yahoo.com
WEB_STREAMING	Yahoo website	4500ULT-Supp	www.yahoo.com
Application	Dream_JumpDubai_4K-mkv - VLC media player	4500ULT-Supp	C:\Program Files (x86)\VideoLAN\VLC\vlc.exe C:\Users\Jupiter\Desktop\Dream_JumpDubai_4K.mkv
Application	FC4500 Quick Start Guide-pdf - Adobe Reader	4500ULT-Supp	C:\Program Files (x86)\Adobe\Reader 9.0\Reader\AcroRd32.exe "C:\Program Files\Canvas\Client\Manuals\FC4500 Quick Start Guide.pdf
Text	Scrolling Text	BDESKTOP	San Francisco
Clock	SFO	ADESKTOP	
Image	Jellyfish	4500ULT-Supp	C:\Users\Public\Pictures\Sample Pictures\jellyfish.jpg





## F—Canvas Source Object Files

---



**Figure F.2 - Source Paths**

- Specify the location of the ControlPoint **ServerDataFiles** folder in the **Source Path**. (default shown)
- Specify the destination of the **C2CDataConvert** output in the **Destination Path**. Use the default location unless there is a compelling reason to change it.
- Click the Start button and the utility will generate a **C2CDataConvert** folder with **Object.csv** file in the Destination Path. The file will contain the configuration data for all the ControlPoint Objects.
- Copy the **Object.csv** file to the desktop of the Canvas Catalyst system that will import the ControlPoint objects.
- On the Canvas Catalyst system, open the **Object.csv** file either with Notepad/Wordpad or Excel. If using Notepad or Wordpad, the fields will be comma-separated. If using Excel, the fields will be in cells. Justification of the data in Excel cells (e.g., left, center, right) is unimportant.
- Open the **Object.csv** file in **Excel** or **Notepad** and edit the first line to label the object file:  
1st field = Mimic  
2nd field = [Name of Mimic Object in Canvas]  
3rd field = [**Catalyst**, **CRS-5K** or Host Name]

There is no “Mimic” object in ControlPoint. The **Remote Client** itself is the equivalent of a mimic. It is therefore recommended to create your mimic source(s) first in the csv file. All local sources in the mimic will expect the mimic source to have been created first.

## Canvas Source Object Files

---

10. Each row of the **Object.csv** file is interpreted separately. The data in each row is either turned into a shared source or a mimic local source, depending upon how it is defined in the first column.
11. Both shared and mimic local sources may be included in the csv file (for example, one row with "**DVI**" and another row with "**DVI\_STREAMING**").
12. If you need to create dozens or hundreds of video sources, copy a line, duplicate it as many times as needed, then edit each line for parameter differences.
13. Save the **Object** file in .csv format. When imported into Canvas, it is referred to as a **Canvas Source Object** file. The file may have any name.

---

**NOTE:** At any time, you can import a list of new sources into Canvas. You will again use the **C2CDataConvert** utility to generate a new **Object** file. When you import the new sources, they will be added to the existing list. The old sources will not be overwritten.

---

---

**CAUTION:** If a ControlPoint system is being converted to Canvas, contact Jupiter Support for the document entitled "**Migrating a Catalyst from ControlPoint to Canvas**" and follow the instructions. Once the Catalyst has been converted to a Canvas Client, follow the instructions below.

---

---

**NOTE:** **Object** files may be used to build **Canvas Source Object** batch files that create many **Canvas** sources. This is more efficient than creating each source individually in the **Canvas Administration UI**. See [Appendix F.3 Canvas Source Batch Files](#) for details.

---

## F—Canvas Source Object Files

---

### F.4.2 Importing Canvas Source Object Data to Canvas

Refer to [Section 6.7.6 Import](#) on page 200.

# Appendix G

## —Canvas Settings

---

### G. Canvas Settings

The Canvas client allows users to set specific flags to configure the client functionalities. The following are settings that can be configured by changing the settings file located on the client system in **\ProgramData\Canvas\Client\Settings\ClientConfig.xml**

#### G.1 Canvas Settings Flags

**DisplayOnlyAboveToolbar:** When this setting is true maximizing the client and shell will maximize only above the tool bar and make the windows toolbar permanently visible.

**Possible Values:** true, false

**Default:** true

**VideoDecoderLimit:** Limits the number of software video decoders allowed on the system. If the number of software decoding windows exceeds the VideoDecoderLimit then the windows will not stream and will display "No Resources". If this is set to 0 no video decoder limit is enforced.

**Possible Values:** 0+

**Default:** 0

**PreserveAspectRatio:** When this setting is false all canvas windows will by default open with preserved aspect ratio turned off unless the window is saved in the layout with a different preserve aspect ratio setting.

**Possible Values:** true, false

**Default:** true

**<Locale>\*\*-\*\*</Locale>:** Between the locale tags goes a four letter language code that determines the language of the Canvas client.

**Possible Values:** "en-US": English, "ru-RU": Russian, "zh-CN": Chinese (Simplified), "zh-TW": Chinese (Traditional)

**Default:** en-US

In addition to the above settings, an additional client setting is stored in the windows registry **\Computer\HKEY\_LOCAL\_MACHINE\Software\WWOW6432Node\Jupiter\Canvas\Client**

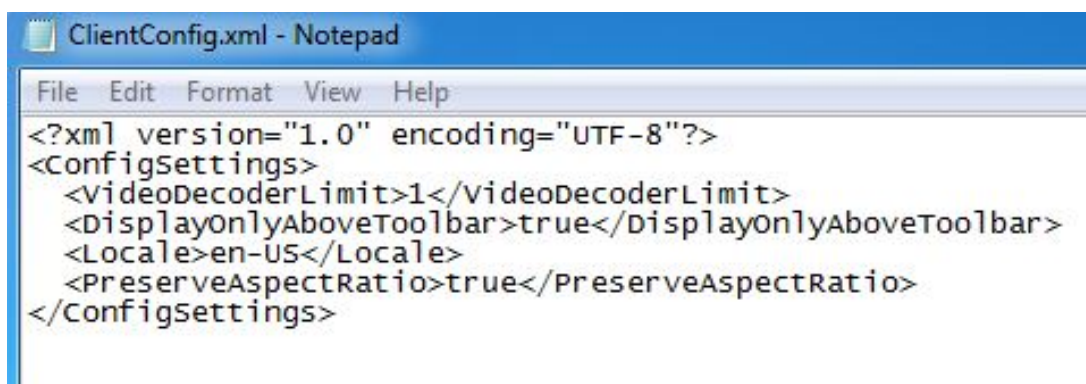
**KeepWindowsInLayoutOrder \*DWORD\*:** The layout will not honor the zOrder of the windows if DWORD = 0. If DWORD = 1 the zOrder will be honored. A value of 0 is false.

**Possible Values:** 0,1

**Default:** 0 (false)

## G.2 Canvas Object String Definitions

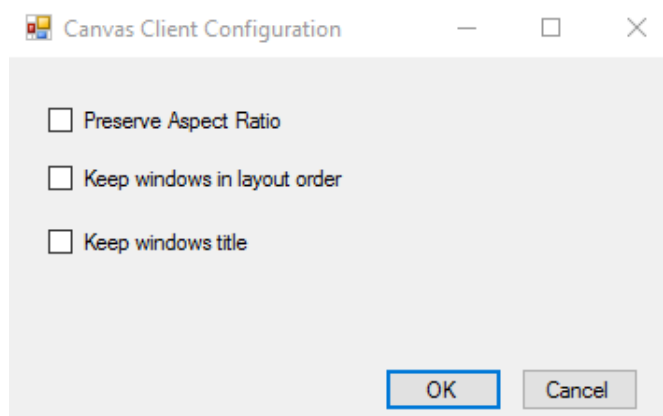
A sample Canvas **ClientConfig.xml** file is shown below:



```
ClientConfig.xml - Notepad
File Edit Format View Help
<?xml version="1.0" encoding="UTF-8"?>
<ConfigSettings>
  <VideoDecoderLimit>1</VideoDecoderLimit>
  <DisplayOnlyAboveToolbar>true</DisplayOnlyAboveToolbar>
  <Locale>en-US</Locale>
  <PreserveAspectRatio>true</PreserveAspectRatio>
</ConfigSettings>
```

**Figure G.1 - Sample ClientConfig.xml file**

In addition to editing the Canvas Client settings through modifying the **ClientConfig.xml** they can also be configured by launching **CanvasConfig.exe** at **C:\ProgramFiles\Canvas\Client\CanvasConfig.exe** Changing the settings through this tool will require logging out of the Canvas client for the changes to take effect.



**Figure G.2 - Canvas Client Configuration**

## Appendix H— Input Capture

---

### H. Input Capture

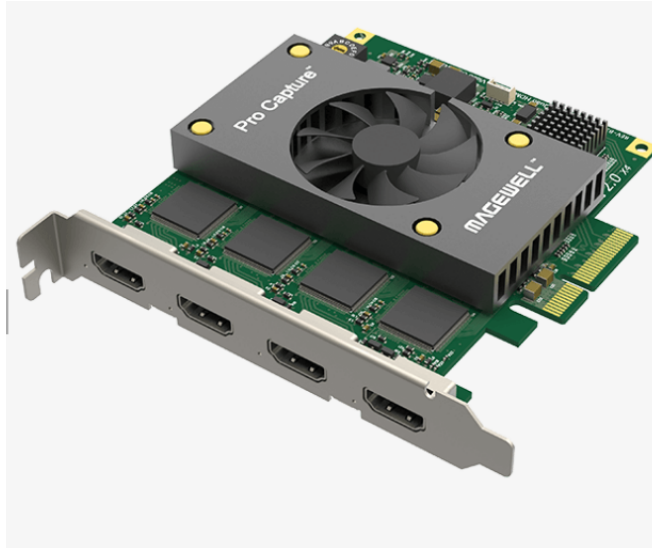
Canvas supports input capture on the PC Client with the following two input capture devices:



**Figure H.1 - Magewell USB Capture HDMI Gen 2**

## H—Input Capture

---



**Figure H.2 - Magewell Pro Capture Quad HDMI**

More information about these products can be found at the URLs below:

- <https://www.magewell.com/products/usb-capture-hdmi-gen-2>
- <http://www.magewell.com/products/pro-capture-quad-hdmi>



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