COMPLETEVIEW 20/20 QUICKSTART GUIDE

VERSION 5.5

SALIENT

TABLE OF CONTENTS

Recommended System Specifications **4**

Desktop Client 4

Recording Server 4

Management Server 4

Windows 7 Information 5

A Word About Databases 5

CompleteView 20/20 Port Information **6**

Management Server Port Information 6

Recording Server Port Information 6

Desktop Client Port Information 6

Remote Applications Port Information 7

Peripheral Port Information 7

Mandatory Firewall Exceptions 7

Optional Firewall Exceptions 8

Installation Introduction 9

Installation Overview 9

Deployment Patterns 9

Management Server Installation 11

Prerequisite Installation and Configuration 11

Installation and Database Selection 12

SQLite Installation 12

SQL Express Installation & Configuration 13

Recording Server Installation 15

Recording Server Installation 15

Desktop Client Installation 17

Desktop Client Installation 17

Optional Video Wall Agent Installation 17

CompleteView 20/20 License Management 19

Obtaining and Applying a License Key 19

General Steps 19
Obtaining the Product ID (GUID) 20
Initial Configuration 21
Configuration Order 21
Desktop Client 21
Configure the Recording Server 22
Add a Recording Server 22
Add a Volume 22
Add a Schedule 23
Add Cameras Automatically 24
Creating and Using Views 25
User Configuration and View Access 26
Add a User 26
Client View Access 26
Additional Resources 28

Recommended System Specifications

Desktop Client

Minimum recommended software configuration:

- Microsoft Windows 10
- Microsoft .NET v4.7.2
- VS 2019 C++ redistributable
- Microsoft DirectX 9.0
- Microsoft Direct3D

Minimum recommended hardware configuration:

- Intel Celeron 1.5 GHz
- 4 GB of system memory
- 10/100/1000 Ethernet Controller
- A graphics accelerator with 256MB of video memory
- 1920x1080 resolution

Recording Server

Minimum recommended software configuration:

- Microsoft Windows 10 / Server 2012 R2 / Server 2016
- Microsoft .NET v4.7.2
- Microsoft DirectX 9.0

Minimum recommended hardware configuration:

- Intel Celeron 1.5 GHz
- 4 GB of system memory
- One PCI-e expansion slot per each Gen II video capture card*

*Gen I capture cards are not supported in CompleteView 20/20.

Management Server

Minimum recommended software configuration:

- Microsoft Windows 10 / Server 2012 R2 / Server 2016
- Microsoft .NET v4.7.2
- SQLite (installed with CompleteView 20/20)
- Microsoft DirectX 9.0
- If using SQL Express, ODBC Driver 13.1 for SQL Server (available at **https://www.-microsoft.com/en-us/download/confirmation.aspx?id=53339**)

Minimum recommended hardware configuration:

- Intel Celeron 1.5 GHz
- 1 Gigabyte (GB) of system memory
- 10/100/1000 Ethernet Controller

Windows 7 Information

Microsoft ended Windows 7 support on January 14th, 2020. For more information, see Microsoft's official release here: **https://support.microsoft.com/en-us/help/4057281/windows-7-support-will-end-on-january-14-2020** .

A Word About Databases

As part of the setup process, previous versions of CompleteView 20/20 installed SQL Server Express 2017 as the default database. Beginning in version 5.0.2, CompleteView 20/20 installs SQLite. SQLite is recommended for use with up to 3 Recording Servers handling 25 cameras each.

If upgrading from CompleteView 4.X, new databases will be created during the installation process. Select the appropriate SQL option during setup.

If upgrading from a previous version of CompleteView 20/20, no changes will be made to the existing database installation. In addition, the current version of CompleteView 20/20 continues to support SQL Server Express 2014, 2016, and 2017.

Clients wishing to utilize SQL Server Express will be required to first install and configure their own database **before** proceeding with CompleteView 20/20 installation.

The option to install the Management Server will be presented upon initial boot of a new PowerProtect server. Only one Management Server per CompleteView 20/20 deployment is permitted. If one already exists, select Cancel. If the Management Server has not yet been installed, select Proceed, then select the database option best suited for the deployment.

CompleteView 20/20 Port Information

Windows Firewall drops incoming network transport layer (UDP/TCP) traffic that does not correspond to pending requests (solicited traffic) or unsolicited traffic that has not been specified as a Firewall exception to be allowed. Windows Firewall can also be configured to block outgoing traffic. By default, Windows Firewall blocks all unsolicited traffic for server, peer, or listener applications and services. Therefore, Firewall exceptions must be configured in order for the CompleteView 20/20 to function properly. The exact list of exceptions needed for an individual system will differ depending upon the system configuration, CompleteView 20/20 options, cameras deployed, and third party extensions installed. Care must be taken to ensure that all needed Firewall exceptions are defined and more importantly, that only needed exceptions are defined.

If a system shipping with CompleteView 20/20 was purchased from Salient Systems, all firewall rules have been pre-configured.

Management Server Port Information

Management Server to Recording Server

Port	Type	Function
4502*	HTTP	Saving and retrieving configuration, operational state
4503	HTTPS	Saving and retrieving configuration, operational state
4242*	TCP	Operational info, real time status updates
4245*	TCP over TLS	Operational info, real time status updates

Recording Server Port Information

Recording Server to Cameras

Port	Type	Function
554	TCP	Camera RTSP
80	TCP	Camera API & RTSP

Recording Server General

Port	Type	Function
25	TCP	SMTP
389	TCP	Active Directory

Desktop Client Port Information

Desktop Client to Recording Server

Port	Type	Function

4502*	HTTP	Saving and retrieving configuration, operational data
4503	HTTPS	Saving and retrieving configuration, operational data
4242*	TCP	Video & audio data, operational info, real time status updates
4245*	TCP over TLS	Configuration and operational data
4255	TCP	Restarting the Recording Server service and pushing updates
8098	TCP	Video Wall

Desktop Client to Management Server

Port	Type	Function
8095*	HTTP	Configuration and operational data
8096	HTTPS	Configuration and operational data

Remote Applications Port Information

TouchView to Recording Server

Port	Type	Function
4502*	HTTP	Configuration and operational data
4503	HTTPS	Configuration and operational data

Web Client to Recording Server

Port	Type	Function
4502*	HTTP	Configuration and operational data
4503	HTTPS	Configuration and operational data
943	TCP	Silverlight (Legacy Version)

TouchView to Management Server

Port	Type	Function
8095*	HTTP	Configuration and operational data
8096	HTTPS	Configuration and operational data

Peripheral Port Information

Cameras to Recording Server

Port	Type	Function
6970-7226	UDP	UDP Video, audio, events over RTP
7775	TCP	ONVIF event handling
3702	UDP	Multicast device discovery

Mandatory Firewall Exceptions

*Ports denoted with an asterisk above are required for CompleteView 20/20 functionality.

Optional Firewall Exceptions

Depending upon system and component configuration, additional CV 20/20 firewall exceptions may be required as noted above.

Installation Introduction

This guide is intended to detail the basic steps required to first install and then configure CompleteView 20/20. For more in-depth, advanced information, consult the documentation once CV 20/20 has been successfully installed. **If CompleteView 20/20 has already been installed as is the case with servers purchased from Salient Systems, proceed to the Initial Configuration section.**

Installation Overview

CompleteView 20/20 installs three main system components:

- Management Server (only one per deployment)
- Recording Server
- Desktop Client

Deployment Patterns

CompleteView 20/20 is comprised of **one** Management Server, along with one or more Recording Server(s), and Client(s). Consequently, CV 20/20 may be deployed in a 1 to 4 tier configuration, illustrated below. Note that the SQL database is present in all patterns, but is only illustrated in the Four Tier installation, where it resides on its own dedicated server.

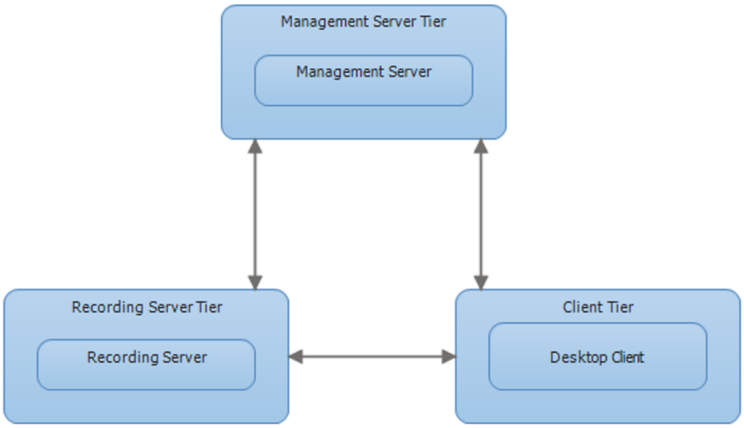
One Tier, the simplest pattern, where all components are installed on one machine. This guide will cover this type of installation. However, the steps covered herein are applicable to all installation paradigms. Simply run the appropriate installer on the appropriate machine as the desired topology dictates.



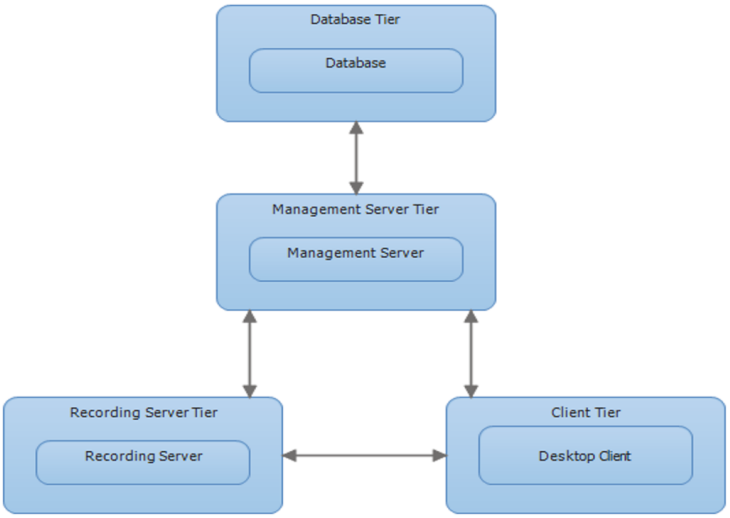
Two Tier, where components are divided between two machines, as illustrated.



Three Tier, where components are divided among three machines, as illustrated.



And, finally, **Four Tier**, where components are divided among four machines, as illustrated.



Management Server Installation

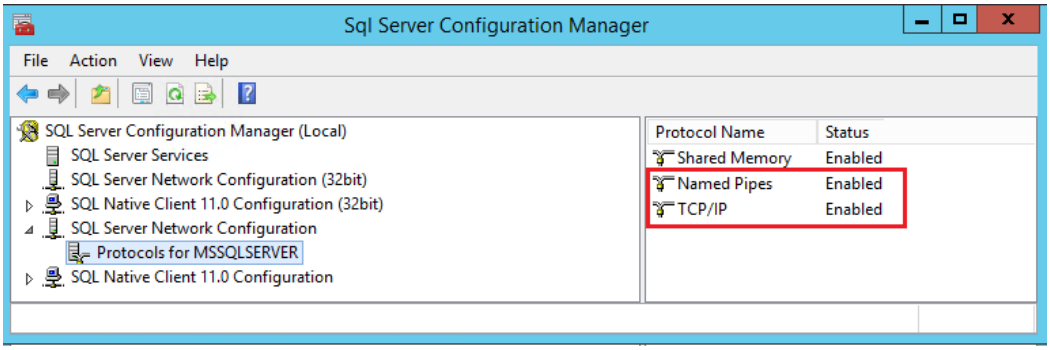
The Management Server coordinates communication between the various elements of CompleteView 20/20. **Note:** Only one Management Server per deployment is permitted. If setting up a PowerProtect server for the first time, confirm the presence or absence of a Management Server in the site's deployment. If a Management Server is present, select Cancel. If Management Server has not yet been installed, select Proceed, and follow the on-screen instructions, then skip to the **Initial Configuration** section of this document.

Prerequisite Installation and Configuration

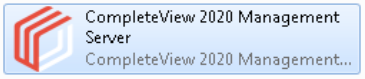
Both Named Pipes and TCP/IP must be enabled within SQL Server Network Configuration **before** installing the Management Server. The following steps apply **only** to SQL Express, **not** SQLite, and have already been applied to PowerProtect servers purchased from Salient Systems.

Steps:

1. Launch SQL Server Configuration
2. Expand SQL Server Network Configuration
3. Select "Protocols for..." the appropriate SQL instance
4. Enable Named pipes and TCP/IP
5. Restart both SQL Server and SQL Server Browser Service from services.msc



Double click the CompleteView 20/20 Management Server installer.

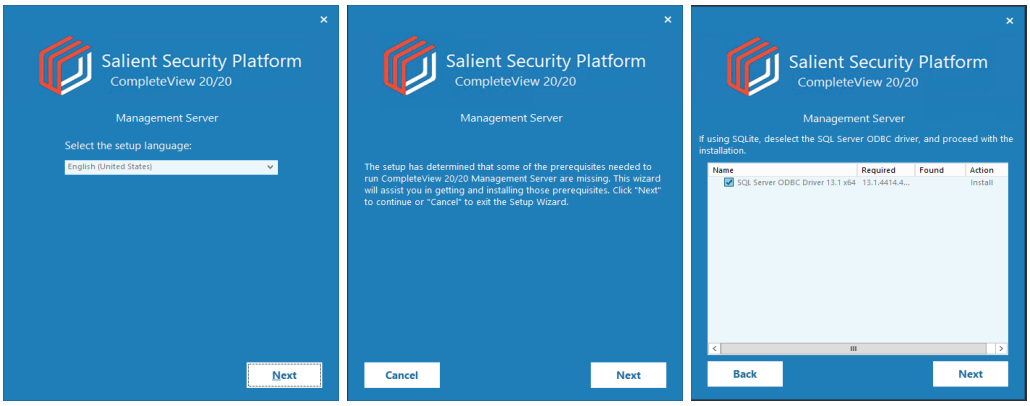


The installer will check the system for prerequisites.

Note: The .NET framework and other prerequisites may already be installed on a given system, and may not be mentioned during the installation process.

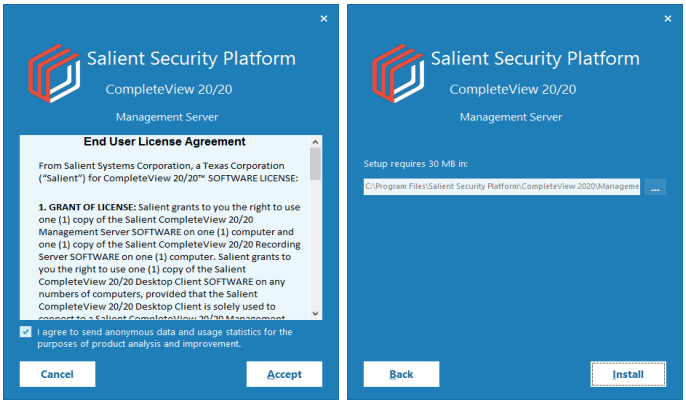
If using SQLite, deselect the SQL Server ODBC driver on the second installer screen, if prompted, and proceed with the installation. If the ODBC driver is installed unintentionally, no action needs to be taken.

Note: If upgrading to a newer version of CompleteView 20/20 and the previous version was utilizing SQL Server, you will be prompted to enter the database's credentials after the verification of the installation path information.



Installation and Database Selection

Note: To improve future product development, CompleteView 20/20 collects and sends anonymous analytic data such as geographic location, version information, OS, platform type, system memory, etc., to Salient Systems. Users may opt out by deselecting the checkbox at the bottom of the first installation screen.



At this point, there are two options for installation of the database: SQLite or SQL Express.

SQLite Installation

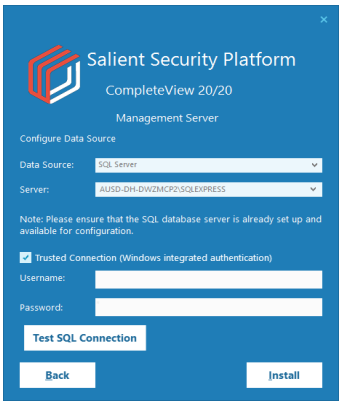
SQLite is recommended for use with up to 3 Recording Servers handling 25 cameras each. The optional password for the SQLite database acts as an encryption key, and will be required if the database is ever to be restored or moved in the future. Either accept the default path or enter a new one, and click Install to continue.



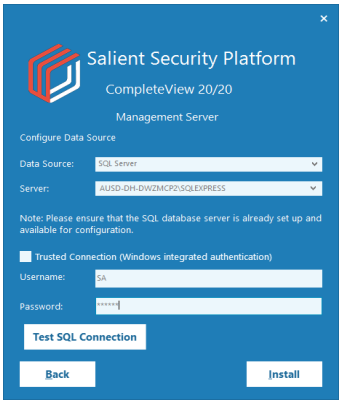
SQL Express Installation & Configuration

Note: If selecting SQL Server, the installer will scan for an existing server. If one is detected, the CompleteView 20/20 installer must provide valid credentials to the existing SQL server to continue, either via Trusted Connection or by manually entering the SQL Server's administrative credentials. CompleteView 20/20 supports SQL Server 2014, 2016, and 2017. If one is not detected, exit the installer, install and configure the SQL Server, then proceed with Management Server installation.

If Trusted Connection is selected, the credentials of the currently logged in Windows user will be used to connect to the SQL server.



If Trusted Connection is not selected, enter the SA (or other administrator) credentials for the SQL Server.



In the final step, enter a complex password which adheres to the specifications below. It will be used for database creation and access. Click Install.

- The password must be at least eight characters long.
- The password contains characters from three of the following four categories:
    1. Latin uppercase letters (A through Z)
    2. Latin lowercase letters (a through z)
    3. Base 10 digits (0 through 9)
    4. Non-alphanumeric characters such as: exclamation point (!), dollar sign ($), number sign (#), or percent (%).
- Passwords can be up to 128 characters long. You should use passwords that are as long and complex as possible.

For more information, see **Microsoft's SQL Password Policy.**







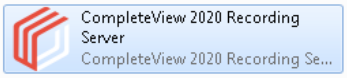
The Management Server is now installed. Proceed to the next section.

Recording Server Installation

This section describes the process of installing the CompleteView 20/20 Recording Server. As with the other sections in this document, it presumes a One Tier installation. Recording Server comes pre-installed on PowerProtect servers.

Recording Server Installation

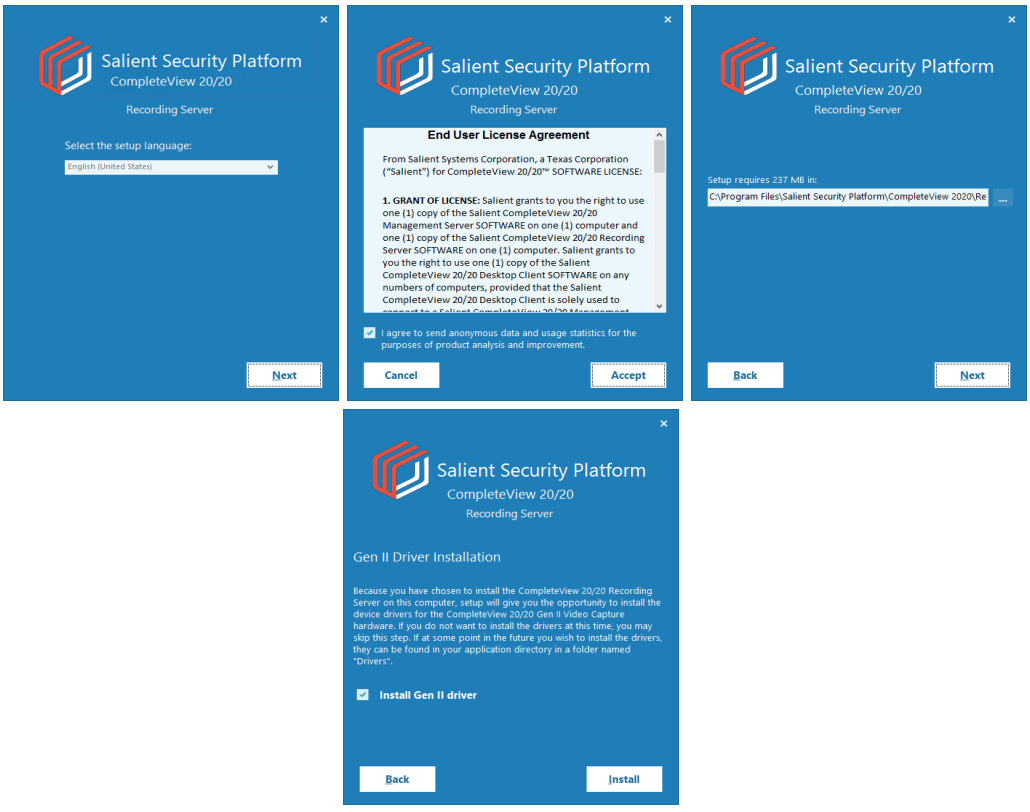
Double click the CompleteView 20/20 Recording Server installer.



If upgrading from CompleteView 4.X, the Recording Server installer will prompt to uninstall the current version before installing the upgrade. Proceed through the uninstall.

Note: To improve future product development, CompleteView 20/20 collects and sends anonymous analytic data such as geographic location, version information, OS, platform type, system memory, etc., to Salient Systems. Users may opt out by deselecting the checkbox at the bottom of the first installation screen.

Accept the licensing agreement, accept or specify the path to which the Recording Server should be installed, click Next, and wait for the installation to complete.



You may be prompted to install Gen II card drivers. If installation of the driver is appropriate (i.e., if analog cameras will be added to the system), then select the checkbox, otherwise click Next. If unsure, go ahead and install the drivers, as there is no harm in having them present, even if unused. The Recording Server will complete installation.



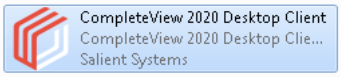
When completed, click Finish, and proceed to the next section.

Desktop Client Installation

This section describes the process of installing the CompleteView 20/20 Desktop Client. As with the other sections in this document, it presumes a One Tier installation. Desktop Client comes pre-installed on PowerProtect servers.

Desktop Client Installation

Double click the CompleteView 20/20 Desktop Client installer.

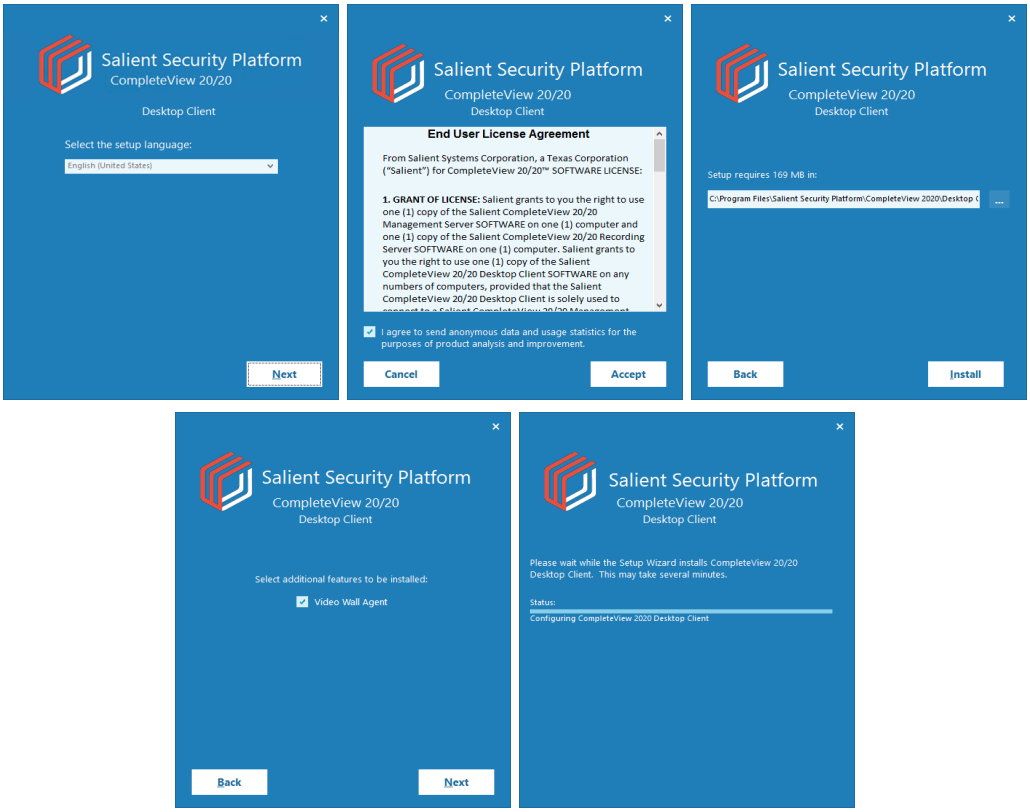


Note: To improve future product development, CompleteView 20/20 collects and sends anonymous analytic data such as geographic location, version information, OS, platform type, system memory, etc., to Salient Systems. Users may opt out by deselecting the checkbox at the bottom of the first installation screen.

Optional Video Wall Agent Installation

During the Desktop Client installation process, an option to install the Video Wall Agent (VWA) is presented. The VWA allows a workstation to be configured to display full screen video, Views, and Maps across all attached monitors. The VWA is intended to be installed on client workstations meant for displaying data, and should not be installed on systems hosting the Management and/or Recording Server(s). For more information, see the Video Wall section of the main manual.

Accept the licensing agreement, accept or specify the path to which the Desktop Client should be installed, optionally select the Video Wall Agent, and click Install.



Wait for the installer to complete, and click Finish.



The Client has now been successfully installed. Proceed to the next section.

CompleteView 20/20 License Management

CompleteView 20/20 systems are licensed on a per camera basis. Every Recording Server in a CompleteView 20/20 must be provisioned with a License Key. The server License Key includes Feature Keys for IP Cameras recording to that server, as well as Feature Keys to enable system-wide functionality common to all Recording Servers in the system. **Note:** Systems with CompleteView 20/20 pre-installed are pre-licensed. If upgrading from CompleteView 4.X and the new Feature Key has been applied, you may skip this step.

In a deployed system, the CompleteView 20/20 licensing schema requires camera licenses to be allocated among CV 20/20 Recording Servers.

- Each Recording Server is provisioned with a License Key.
- Every License Key incorporates a set of Feature Keys.
- The Feature Keys within a License Key enable the set of cameras allocated to that Recording Server.
- The Feature Keys within an individual server License Key also enable any other VMS capabilities or features allocated to that server.

Typically, all Recording Servers in a system incorporate a uniform set of capabilities and features, but each handles a different group of cameras

In a system that employs a single machine hosting the Recording and Management servers, all cameras and features are maintained in a single License Key located on the server.

In a system that employs multiple Recording Servers, the cameras and features included in the system are maintained in multiple license keys where one license key is allocated to each Recording Server.

For each Recording Server in this scenario, the set of cameras and features contained in its License Key agrees with its own configuration. In addition, client configurations must agree with the sum of server configurations.

In a multiple server system, all servers should incorporate the same set of VMS features, but each will manage a different set of cameras.

Obtaining and Applying a License Key

Note: If you purchased a PowerProtect server with CompleteView 20/20 pre-installed, you may skip this section. Proceed to the **Initial Configuration** instructions.

License keys are generated at the time of installation, are private, and cannot be transferred from one server to another.

Prior to server software installation, an email should be received from **licensing@salientsys.com** . Contact Salient Systems at 512-617-4800, 1-844-725-4368, or the email address above for licensing assistance.

General Steps

1. All components of CompleteView 20/20 must be installed first, per the instructions detailed in this manual.
2. Obtain the server Product ID (also referred to as a GUID), as shown below.
3. Reply to **licensing@salientsys.com** with the Product ID (GUID).
4. An email will be sent from **licensing@salientsys.com** with the "cvserver.lic" file attached.

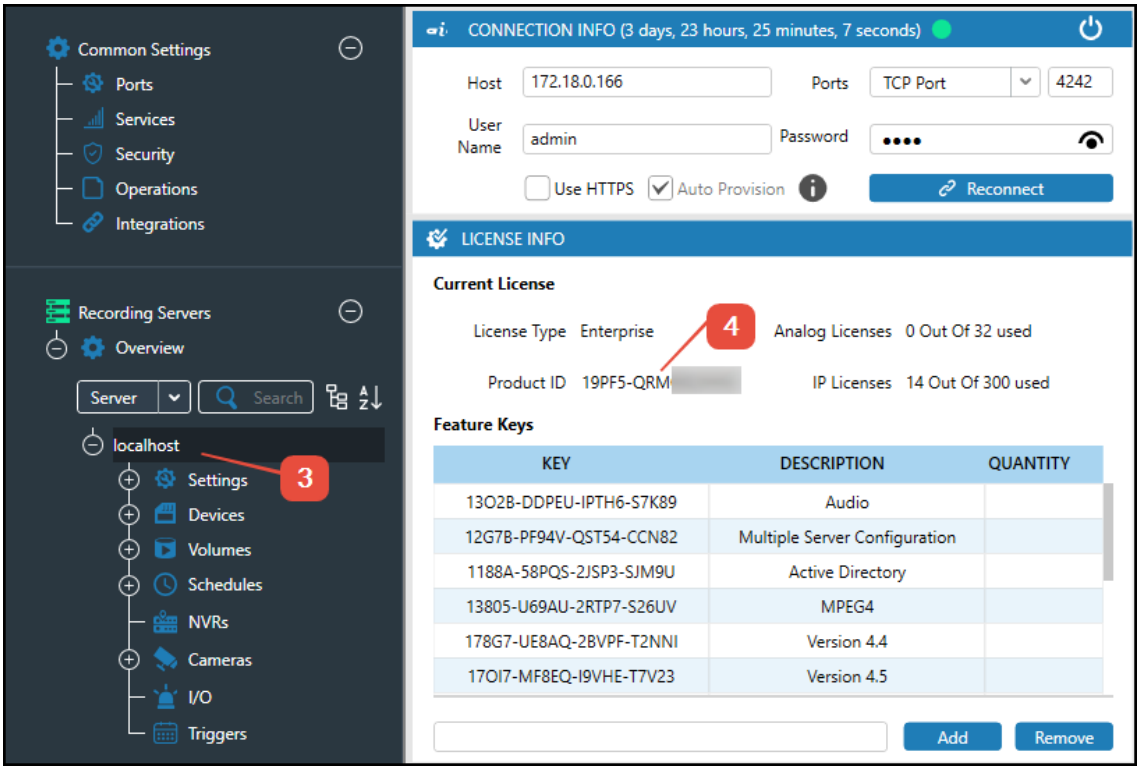
5. When received, each unique license file should be saved or copied to the `C:\Program Files\Salient Security Platform\CompleteView 2020\Recording Server\` directory for each Recording Server.

Each Recording Server is required to have a unique license file. Only one Management Server should be installed for a given deployment. The Desktop Client may be installed on as many machines as desired, but only one instance is required.

Obtaining the Product ID (GUID)

After all components of CompleteView 20/20 have been installed:

1. Log into the Desktop Client (described in **Initial Configuration**).
2. Select the Configure module.
3. Select the desired Recording Server from the left pane.
4. Select and copy the Product ID.



5. Send the Product ID to **licensing@salientsys.com**.

Initial Configuration

Note: The option to install the Management Server will be presented upon initial boot of a new PowerProtect server. Only one Management Server per CompleteView 20/20 deployment is permitted. If one already exists, select Cancel. If the Management Server has not yet been installed, select Proceed, then select the database option best suited for the deployment, as discussed in **A Word About Databases**. If upgrading from CompleteView 4.X, many of these settings will have been automatically migrated to CompleteView 20/20, and will not need configuration. First add the updated CompleteView 4.X server as a Recording Server, then either confirm that the software is properly configured or use the following sections to adjust CompleteView 20/20 as desired.

After successful installation of the Management (if applicable) and Recording Servers, use the Desktop Client to configure the following components in the order listed.

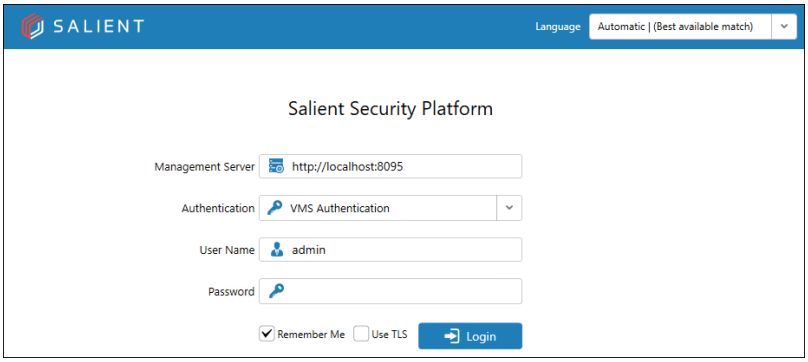
Configuration Order

1. Log into the Desktop Client
2. Set new password
3. Select the Configure function
4. Add a Recording Server
5. Add a Volume to the Recording Server
6. Add a Schedule to the Recording Server (optional)
7. Add one or more cameras to the Recording Server
8. Add one or more Views
9. Add one or more users

Configure other system components as necessary.

Desktop Client

Logging in to the Desktop Client is similar to most Windows applications. Either utilize the Desktop icon, or browse to Start/S/Salient Security Platform. If the Management Server was installed locally, leave the default path, otherwise enter the URL to the remotely installed Management Server, utilizing port 8095, as indicated below. Authentication should be left in the default state, unless otherwise required. Either use existing credentials or the defaults. **The default User Name is "admin". Leave the Password field blank.** Changing the password will be required after initial login.



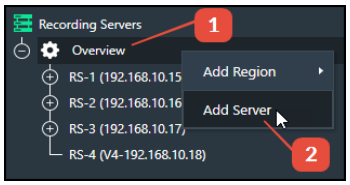
Configure the Recording Server

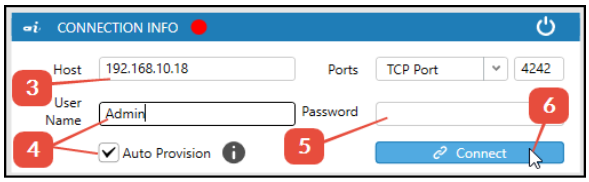
Once logged into the Desktop Client, **click the Configure module**. From here, a Recording Server will be added, Volumes created, Schedules assigned, and cameras added. These instructions present the minimum level of configuration necessary for initial functionality of the CompleteView 20/20 server. More detailed information may be found in the help documentation, installed with CV 20/20. After each set of steps, save the configuration by clicking the disk icon, located near the right corner of the toolbar.



Add a Recording Server

Steps:

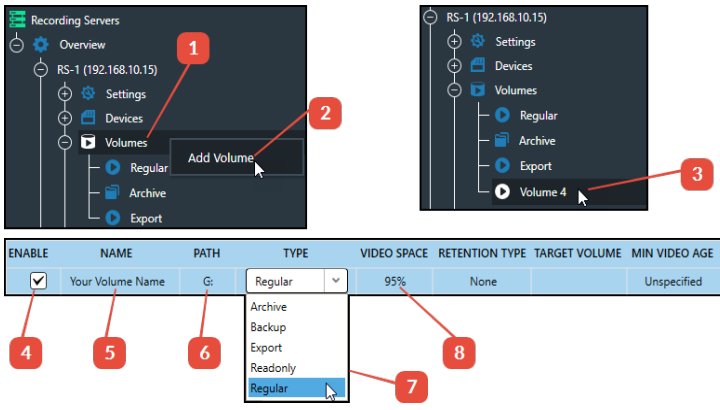




1. Right-click on Overview
2. Select Add Server
3. Enter the Recording Server's Host HTML address or IP address.
4. Enter the username. The Recording Server's default username is Admin, but if the Recording server is installed on a different machine than the Client, enter the Windows credentials where the Recording Server resides.
   a. Leave Auto Provision checked. See main manual for more information.
5. Enter the Recording Server's Password. If the Recording server is on a different machine than the Client, the Windows credentials for that machine are required. Optionally, select Use Common Settings to apply those settings to the newly added Recording Server.
6. Select Connect
7. Save the configuration

Add a Volume

Steps:

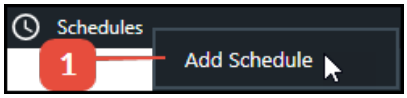


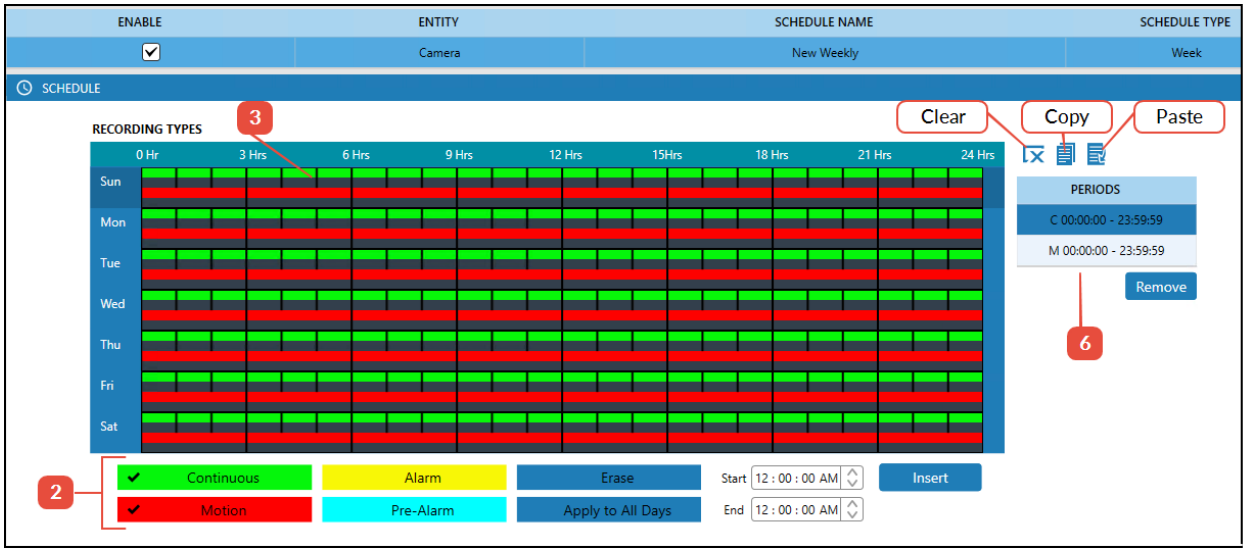
1. Right-click on Volumes
2. Select Add Volume (Alternately, click the Add button in the Volumes pane)
3. Highlight/select the new volume
4. Set the volume to Enabled (to record)
5. Optionally, name the volume
6. Ensure the correct volume path is in the path line (if the path does not exist, it will be created during this process)
7. Use the Type pull-down menu and select the volume type (every recording server must have at least one regular volume)
8. Video Space should be set at 95%.
9. Save the configuration

Add a Schedule

CompleteView 20/20 ships with two default schedules; one encompassing 24x7 continuous and motion recording, and the other a QuickTrack, alarm-only schedule. Follow the steps below to add a custom schedule, if desired. Otherwise, skip this step.

Steps:





1. Right-click on Schedules and select Add Schedule (Week Schedule, if prompted)
2. Click on the desired recording type(s) or Home Preset, so they display a checkmark
3. Either use your mouse pointer and drag it from left to right across the timeline in order to enable the desired recording for the entire day **or** manually enter the Start and End times and click Insert. Manually entering the start and end times allows for more precise configuration.
4. **Alternatively**, different recording types may be placed at different hours of the day by selecting the recording type and dragging the mouse pointer across the desired time or manulally entering the start and end times.
5. **Alternatively**, you may also copy a day's schedule and paste it to another day.
6. Configured recording periods are shown in the table to the right of the timeline and may be sorted and removed.

7. Check the boxes to associate cameras to the schedule. Variations in schedules for individual cameras will require the creation of separate schedules for the affected cameras.
8. Save the configuration

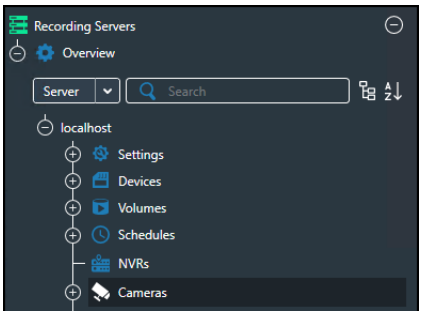
Add Cameras Automatically

Cameras may be added either manually or automatically.

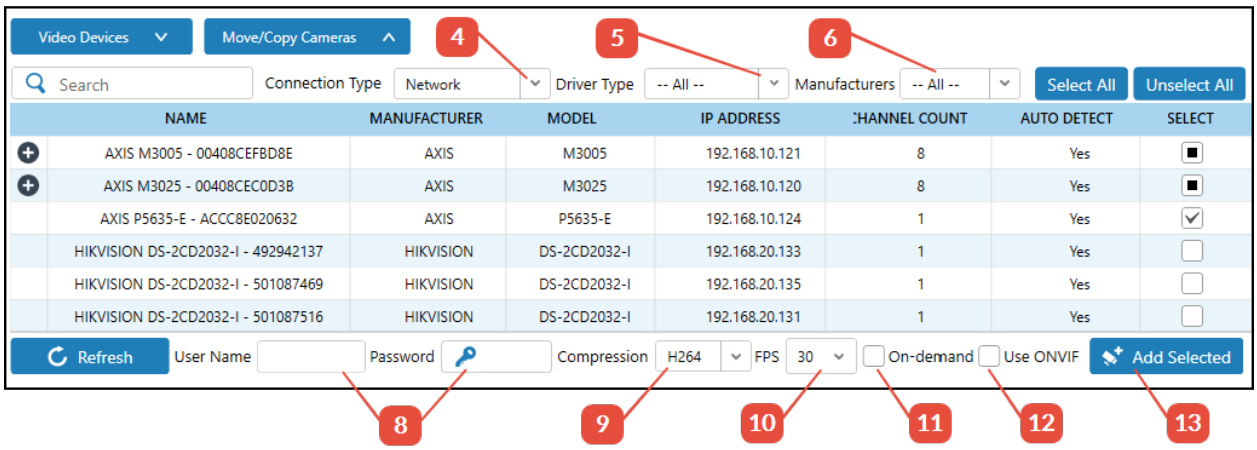
Steps:

1. In the Recording Servers Panel, select the Recording Server that you wish to add cameras to.
2. On the recording server tree, select the Cameras Node
3. In the bottom left corner of the camera panel, select Video Devices. A pop up list will appear.





4. Select Network as the connection type, if necessary
5. Select the appropriate driver type, or leave as All



6. Select device Manufacturer (scroll through the list)
7. Scroll through the list of devices and check the Select box
8. From the bottom toolbar, enter the device's credentials
9. Select the appropriate compression
10. Select the frame rate
11. Optionally, select On demand (On demand is useful for low bandwidth networks, but is not recommended in typical deployments. If selected, the video stream from the cameras will not be recorded. Consult the main manual for more information.)
12. Optionally, select Use ONVIF if no camera-specific or known good driver is available, and the camera is ONVIF, profile S compatible.
13. Press the Add Selected button; (bottom right corner)
14. Save the configuration

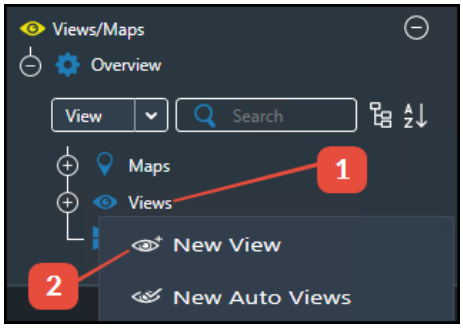
After adding a Recording Server, at least one Volume and camera, proceed to the next section.

Creating and Using Views

After configuring at least one Recording Server, adding a Volume, and at least one camera, create at least one View via the Client Views subpanel. These steps depict manually creating a View, but CV 20/20 comes pre-configured with a variety of View templates, accessible via the Template Menu.

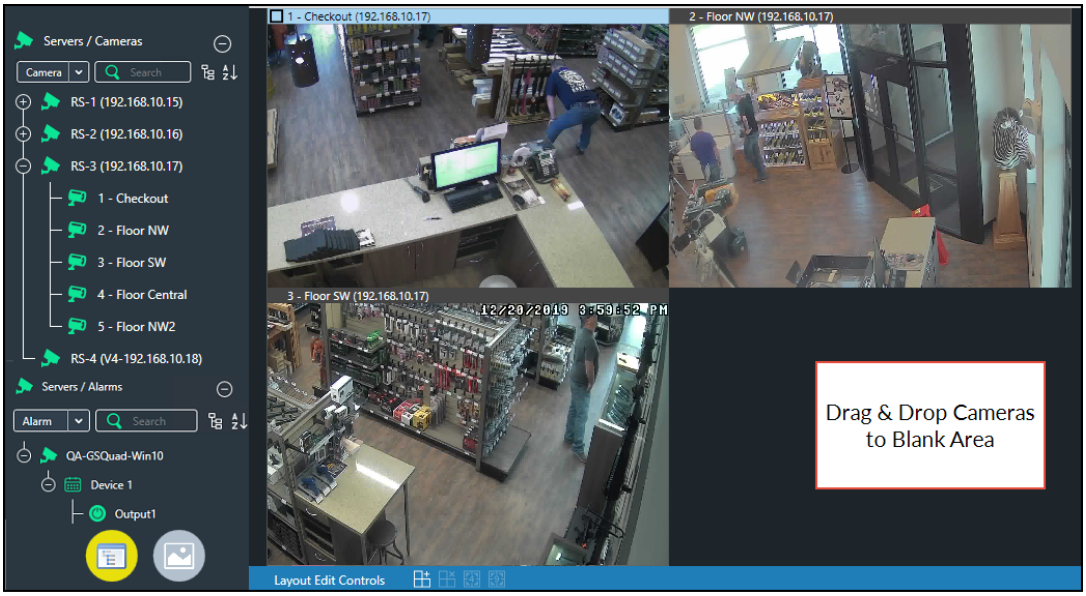
Steps:

1. Right-click on Views
2. From the menu that appears, select New View



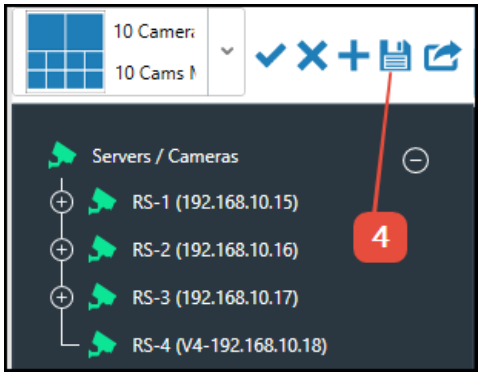
Note: Wait for the View Creation Panel to appear with the list of Recording Servers displayed to the left

3. Drag video cameras from list of the available Recording Servers onto the large blank area to the right.



Important Note: to build the template, drop the desired video onto some portion of the blank area beside the presently existing video camera feeds.

4. **Optional:** save the view as a template



5. Save the configuration

User Configuration and View Access

CompleteView 20/20 implements two types of users: Local and Active Directory. This section details configuration of local users. Consult the main guide for configuration of Active Directory users, as well as local and Active Directory groups.

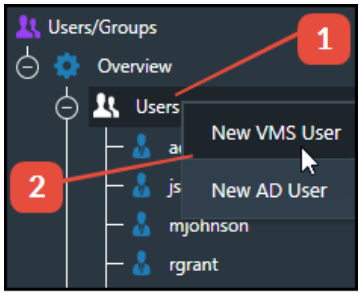
Add a User

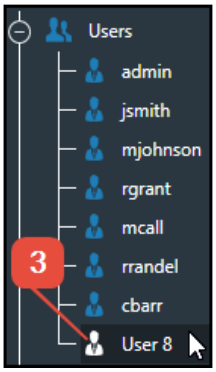
From the Configure function, select Users/Groups.

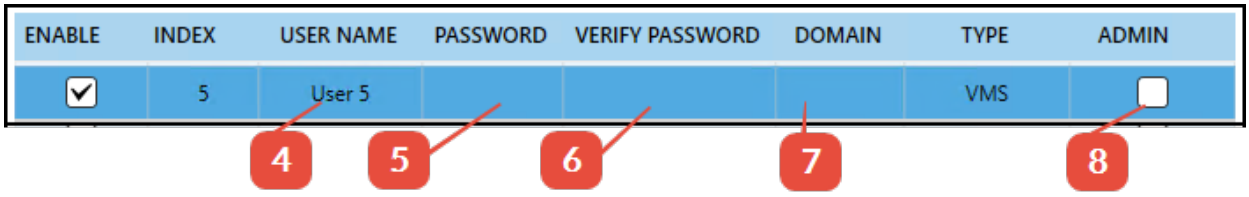
Steps:

Steps:

1. Right-click on Users
2. Select New VMS or New AD User
3. The default user (example: User 8) will appear in the list of users
4. Change the username
5. Add a user password (click in the box and type)
6. Verify the password
7. Optional: if Active Directory is utilized, enter the domain name
8. Optional: if the user is to be an Admin, select the Admin checkbox
9. Save the configuration



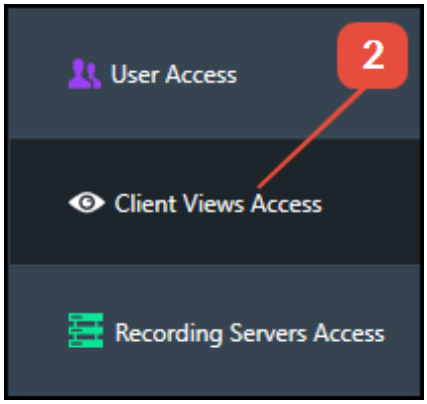




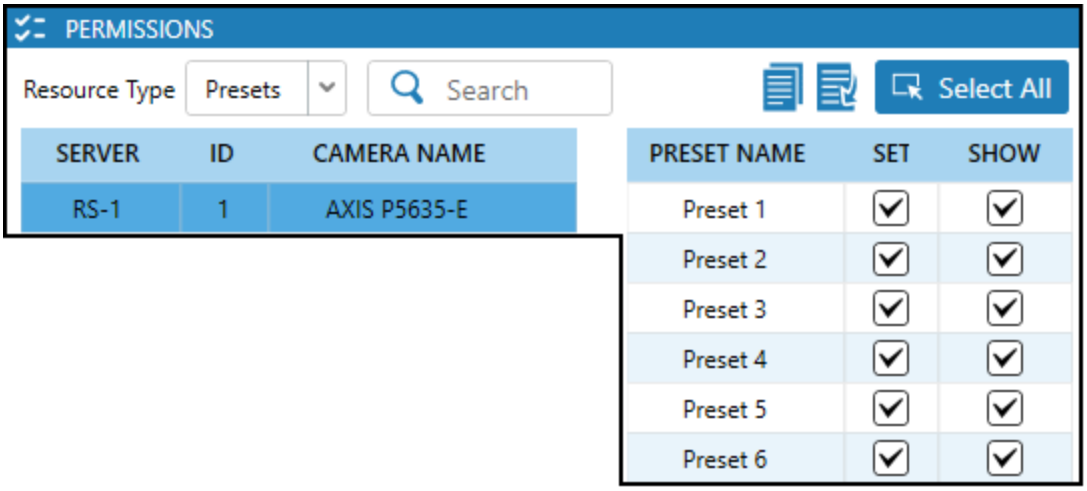
Client View Access

From the Client Views Panel, the Administrator can grant or deny access to a specific client view, map, event, PTZ preset, trigger, event, input and/or output, etc. Additionally, the Administrator has control over user and group camera permissions. Checked boxes grant permissions to a user or group and permit access to views and features such as an alarm or event.

Steps:



1. Select a user or group
2. Select Client Views Access
3. Use the resource Type pull-down menu, select the desired resource to modify. This example modifies presets.
4. Select the camera(s) for which the preset permission change is intended
5. Look at the list and change any desired preset
   a. **Set** - permits the selected user or group to set a preset position from Live View
   b. **Show** - permits the selected user or group to select and show a preset position from Live View.
6. Save the configuration



Additional Resources

Visit the Salient website, **www.salientsys.com**, for additional support and CompleteView training:

- Manuals & Documentation (**https://support.salientsys.com/hc/en-us/categories/115000292747-Knowledge-Base**) – Includes all relevant manuals.
- Online Tech Support (**https://support.salientsys.com/hc/en-us**) – Get quick access to online tech support modules that cover the most frequently asked product questions, such as "Adding IP Camera Licenses."
- Training (**https://support.salientsys.com/hc/en-us/categories/115000302988-Training)** – we offer both online and classroom training.
    - CompleteView™ Online Certification - Register online and access the interactive training modules. Certification is valid for one year.
    - CompleteView™ Classroom Certification – Instructor led 2-day course, held in a regional classroom setting, designed to provide you with certification on CompleteView video management software. Certification is valid for two years.
    - CompleteView™ Remote Certification – Instructor directed 2-day course, that the student accesses through their own computer, designed to provide you with certification on CompleteView video management software. Certification is valid for two years.
    - Please visit the Salient website to see the training calendar, agenda, and registration. Contact **training@salientsys.com** for questions.

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