StreamConnect for Digital Watchdog's DW Spectrum VMS

Version 2.0

Installation and User's Guide

613-003379 Rev. A

Contents

Overview

StreamConnect for Digital Watchdog's DW Spectrum VMS is a plugin to the DW Spectrum Video Management System (VMS) in networks where the surveillance cameras are connected to Allied Telesis Power over Ethernet (PoE) switches.

StreamConnect allows you to perform tasks such as rebooting the surveillance cameras and managing port power allocations using the DW Spectrum client without network administrator credentials.

The DW Spectrum VMS, developed by Digital Watchdog, is a system that manages surveillance cameras and recordings. Surveillance cameras are often connected to and powered by PoE switches, such as Allied Telesis PoE switches.

Guidelines for StreamConnect

Here are guidelines for network configurations for StreamConnect:

- StreamConnect supports multi-server configurations as well as single-server configurations.
- StreamConnect supports the Allied Telesis Layer 2 and Layer 3 PoE switches.
- StreamConnect supports the DW cloud environments.
- StreamConnect is not designed to be used with switches configured in the Virtual Chassis Stacking (VCS) mode.

Network Configurations for VMS

This section explains a standard network configuration for VMS and network configurations that Allied Telesis supports for StreamConnect.

Standard Network Configuration for VMS

Figure 1 shows a standard network configuration for a VMS installation. In this configuration, networks for surveillance cameras and client machines are separated. Cameras are physically exposed to potential intruders so that segregating the camera network provides security to the internal management networks. Separating networks also prevents video traffic caused by the cameras from consuming bandwidth on the client network.

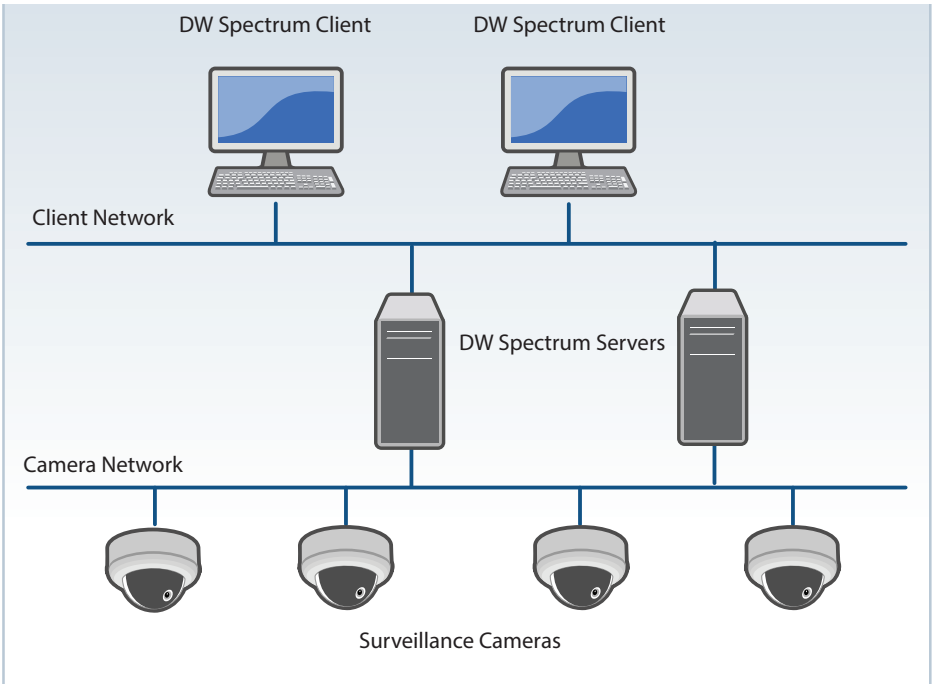

Figure 1. Standard Network Configuration for VMS

VMS Network Configurations with StreamConnect

The four types of network configurations with VMS that Allied Telesis supports for StreamConnect are introduced in this section. These network configurations also provide security to the internal management networks and prevents video traffic from consuming bandwidth on the client network. In addition, the AlliedWare Plus™ PoE switch simplifies cabling and maintenance for the cameras because a PoE switch delivers both data and power to connected devices through the Ethernet cables.

StreamConnect supports the following network configurations:

Single-Server VMS Configuration with the Allied Telesis Switch

A network configuration with a single DW Spectrum VMS server where the surveillance cameras are connected to an AlliedWare Plus™ PoE switch is shown in Figure 2.

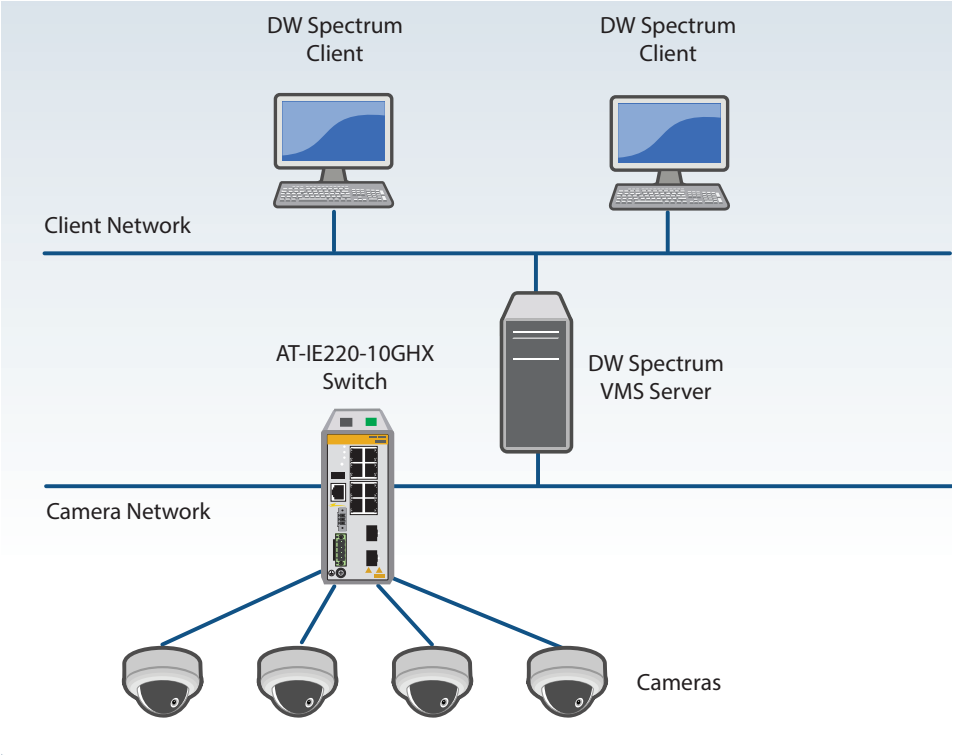

Figure 2. Single-Server VMS Configuration with Allied Telesis Switch

In the network configuration in Figure 2, the DW Spectrum client communicates with the AT-IE220-10GHX switch via the DW Spectrum VMS server.

Multiple-Server VMS Configuration with the Allied Telesis Switch

Figure 3 shows a network configuration with multiple DW Spectrum VMS servers where surveillance cameras are connected to an AlliedWare Plus™ PoE switch.

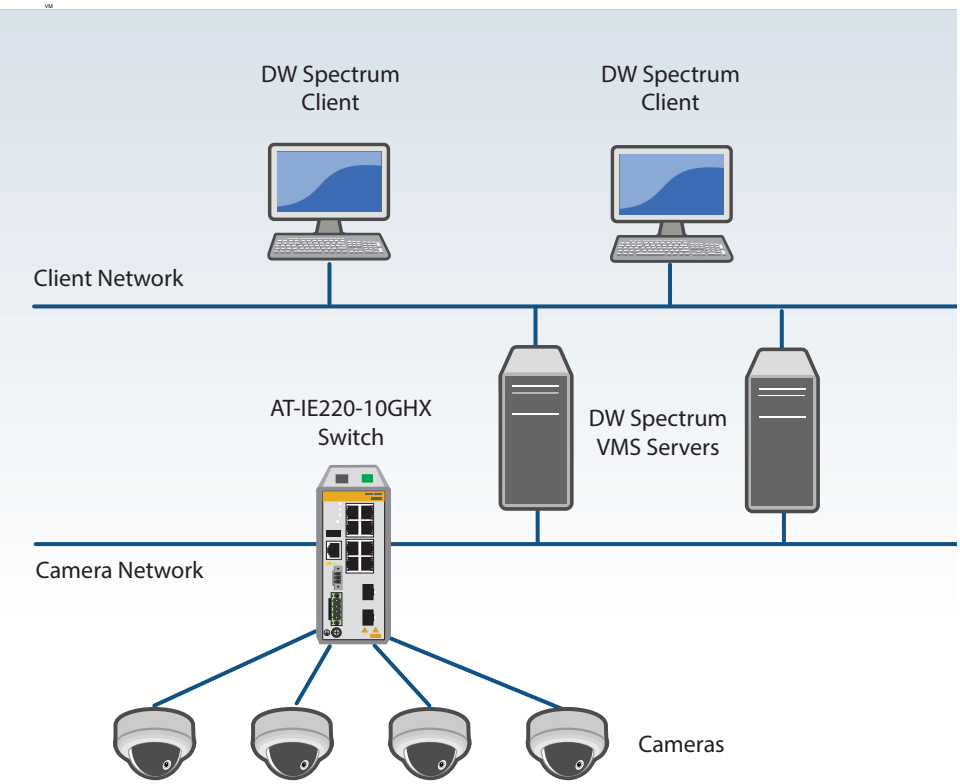

Figure 3. Multiple-Server VMS Configuration with Allied Telesis Switch

StreamConnect supports networks where multiple DW Spectrum VMS servers are configured as well as a single server configuration.

VMS Configuration with Allied Telesis Layer 3 Switch

StreamConnect supports a VMS network configuration with the Allied Telesis Layer 3 switch. You can simplify a network configuration with a PoE layer 3 switch, such as the AT-IE340-20GP switch. Figure 4 on page 7 shows that the AT-IE340-20GP switch's routing capability provides security by separating the camera network and client network.

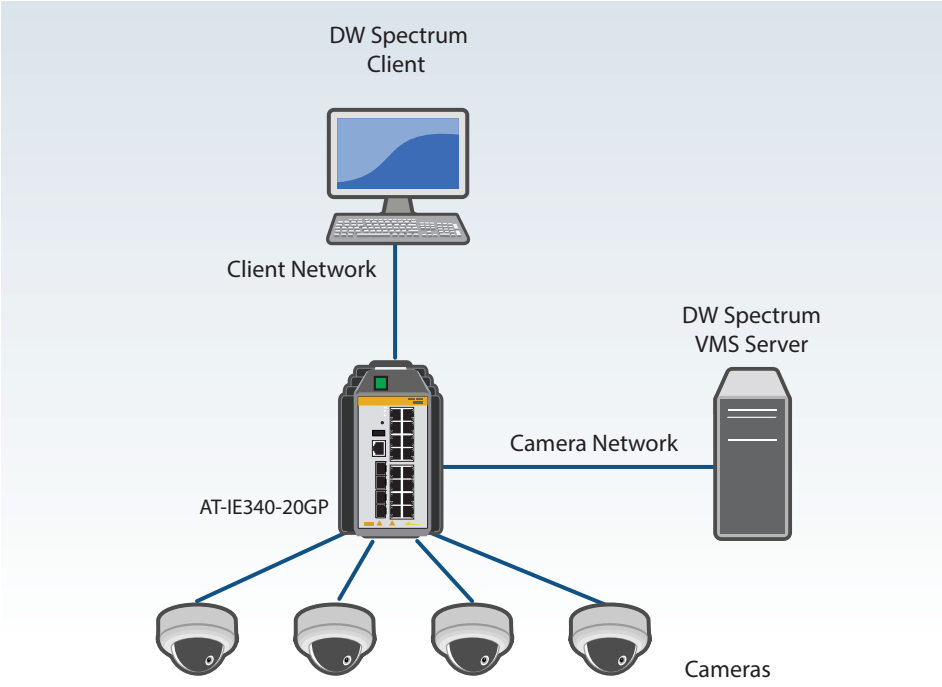

Figure 4. VMS Configuration with Allied Telesis Layer 3 Switch

VMS Configuration in the DW Cloud Environment

StreamConnect supports a DW Spectrum VMS system that is accessed using DW Cloud. DW Cloud is a cloud-based service that users can access their DW Spectrum VMS systems remotely.

StreamConnect works with any of the supported VMS configurations that are accessed with DW Cloud. Figure 5 on page 8 illustrates a VMS configuration with Allied Telesis Layer 3 switch using the DW Could service.

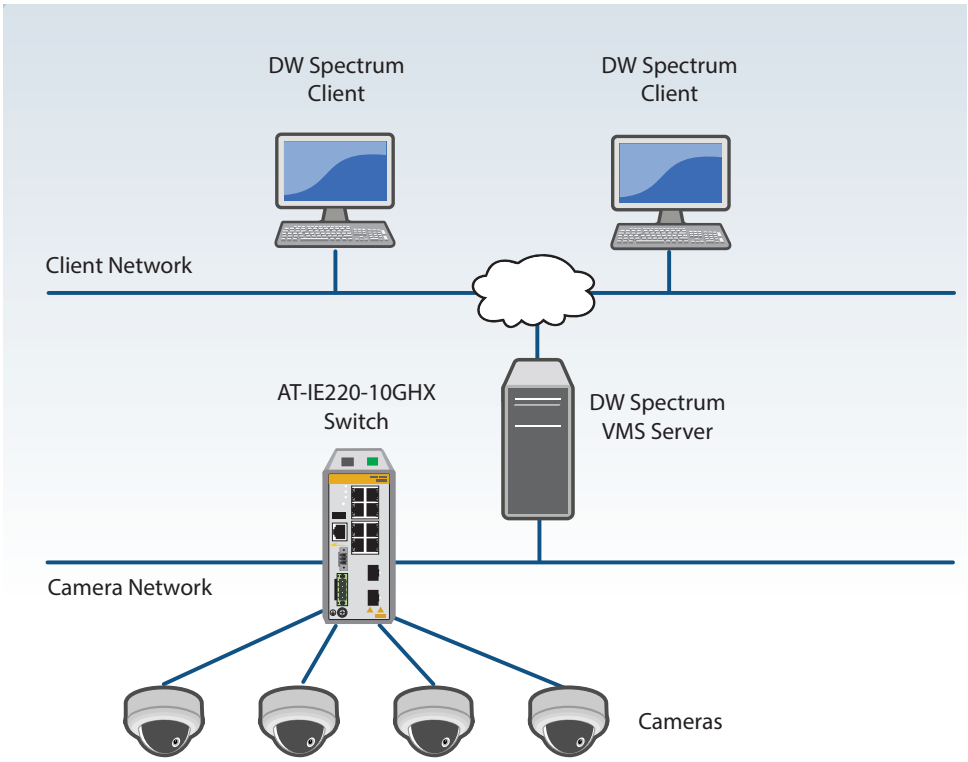

Figure 5. VMS Configuration in DW Cloud Environment

Installing StreamConnect

StreamConnect supports both Linux and Windows based DW Spectrum VMS servers:

- For the Linux based server, go to "Installing the Plug-in on the Linux Based Server" on page 9
- For the Windows based server, go to "Installing the Plug-in on the Windows Based Server" on page 10

Hardware Requirement

StreamConnect is compatible with any AlliedWare Plus™ PoE-capable Layer 2 and Layer 3 switches. AlliedWare Plus™ is an operating system for Allied Telesis switch and router products.

Software Requirements

Here is a list of software requirements:

- AlliedWare Plus™ version 5.5.4 or later for Allied Telesis switches
- One of the following DW Spectrum VMS server software versions:
  - 6.0.1.40221 or later
  - 6.0

  Before StreamConnect is installed, the DW Spectrum VMS software must already be installed on the server.
- One of the following Operating Systems:
  - Ubuntu 20 Linux
  - Ubuntu 22 Linux
  - Windows 10, 64-bit
  - Windows 11

Installing the Plug-in on the Linux Based Server

To install StreamConnect onto the Linux based server:

1. Ensure that your system meets "Hardware Requirement" and "Software Requirements" on this page.
2. Download the StreamConnect packages onto the DW Spectrum VMS server.
3. Start the Linux terminal on the server.

4. Enter the following command at the prompt:

   ```
   > sudo dpkg -i file_name.deb
   ```

   file_name: specify the name of the plug-in software package with the .deb file extension. For example:

   ```
   dw-ati-integration_2.0-a02.deb
   ```

   The prompt returns and the installation is completed successfully to the package script.

5. Close the Linux terminal.

Installing the Plug-in on the Windows Based Server

To install StreamConnect onto the Windows based server:

1. Ensure that your system meets “Hardware Requirement” and “Software Requirements” on page 9.
2. Download the StreamConnect installer onto the DW Spectrum VMS server.
3. Close the DW Spectrum client and management client if they are running.
4. Start the Windows on the server.
5. Click the StreamConnect installer icon on the desktop.
6. When Microsoft Defender SmartScreen gives you a warning, click the **More info** link, then click **Run anyway** as shown in Figure 6.

Note
You might receive multiple warnings from Microsoft Defender.

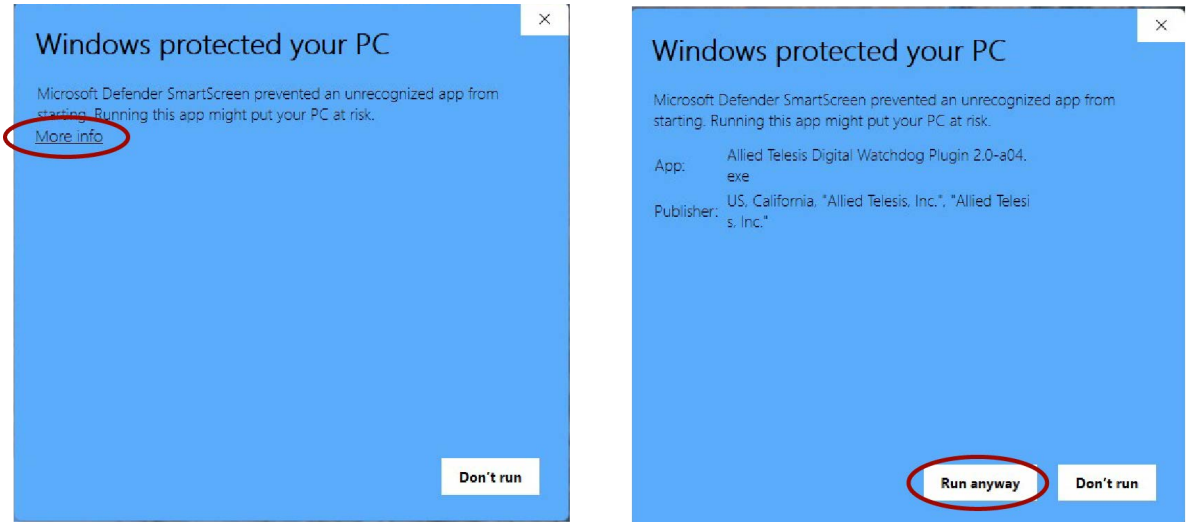

Figure 6. Defender SmartScreens

7. On the User Account Control dialog box, click **Yes** to allow the Installer to proceed. See Figure 7.

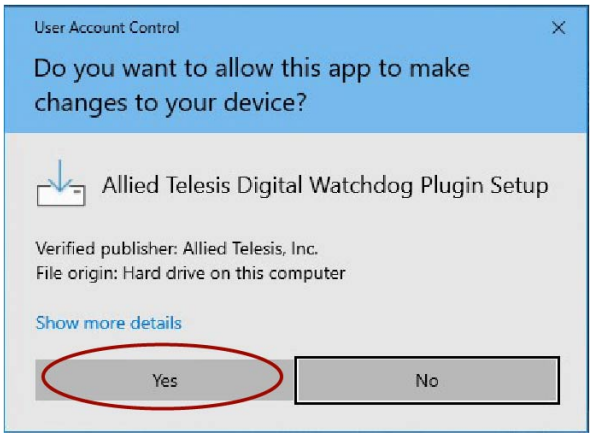

Figure 7. User Account Control Dialog Box

8. On the next Setup screen, click **Install**.

   Wait until the installation process is completed.

9. When the Setup screen notifies you that the installation is completed, click **Finish**.

10. Go to "Configuring ATI Switch and Cameras with StreamConnect" on page 12.

Configuring ATI Switch and Cameras with StreamConnect

After installing StreamConnect into the DW Spectrum VMS server, or when having new surveillance cameras connected to the Allied Telesis switch in your camera network, perform the following tasks:

1. “Accessing Allied Telesis Switch Management in VMS Server” on this page
2. “Adding a New Allied Telesis Switch” on page 15

   If the Allied Telesis switch has already been added, select your switch and skip the switch configuration steps.
3. “Associating Cameras to Allied Telesis Switch Ports” on page 17

If you need to access the Allied Telesis switch for the basic switch settings, such as the switch’s management IP address and administrative user credentials or for upgrading AlliedWare Plus™ firmware to version 5.5.4 or later, visit the Allied Telesis website at:

- Getting Started with the AlliedWare Plus Command Line Interface
- AlliedWare Plus Feature Overview and Configuration Guides

Guidelines for Configuring ATI Switch and Cameras

Here are guidelines for configuring StreamConnect:

- When logging into ATI Switch Management in the DW Spectrum VMS server, use the administrative account. Without administrative privilege, you can manage surveillance cameras, but not ATI switches.
- Allied Telesis recommends using Power over Ethernet (PoE) ports on the switch for surveillance cameras and non-PoE ports as uplink ports. If a PoE port is used as a uplink port, the system might mistakenly detect a camera elsewhere in the network as if it is connected to the PoE port.

Accessing Allied Telesis Switch Management in VMS Server

After installing StreamConnect into your DW Spectrum VMS server, start a DW Spectrum VMS client and access the Allied Telesis Switch Management function.

To access ATI Switch Management:

1. Ensure that the cameras and Allied Telesis switches are cabled and powered on.
2. Start the DW Spectrum VMS client and log in.

   The DW Spectrum user interface (UI) appears as shown in Figure 8 on page 13.

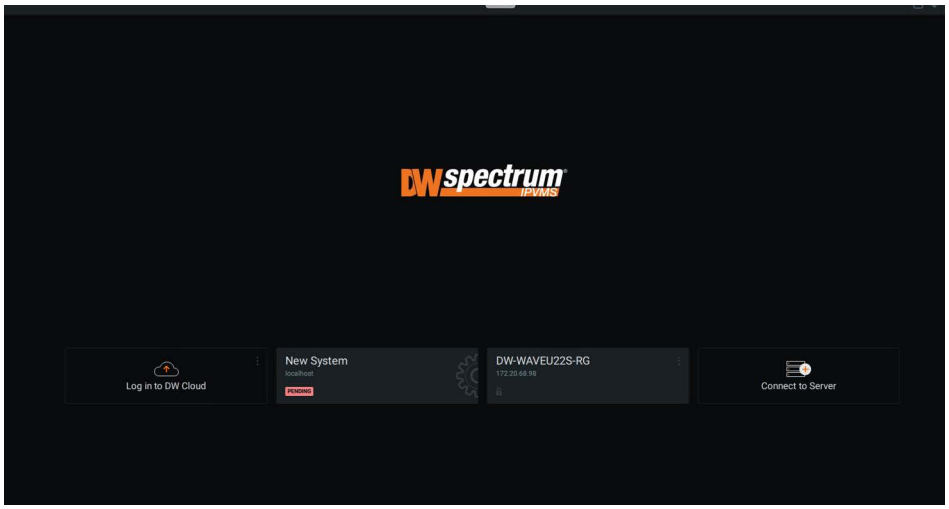

Figure 8. The DW Spectrum Title Page

3. Click the server that the DW Spectrum VMS is running.

   The DW Spectrum VMS UI starts. See Figure 9 as an example.

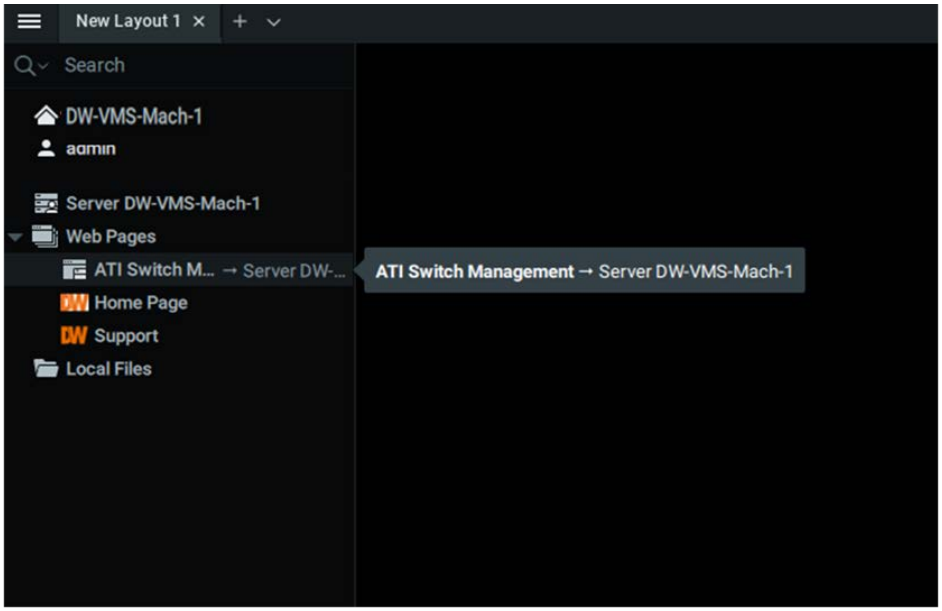

Figure 9. DW Spectrum VMS UI

   The UI lists the DW Spectrum servers in your network on the left navigation pane.

4. On the left navigation pane, double-click **ATI Switch Management**.

Note
If more than one DW Spectrum server are listed, select **ATI Switch Management** for the server that controls the surveillance cameras that you want to manage with StreamConnect.

If you have accessed **ATI Switch Management** once before, you are not required to log in and the ATI Switch Management window in Figure 11 on page 15 appears. Go to Step 6.

When you access the ATI Switch Management for the first time or you were logged out, the following window appears. See Figure 10.

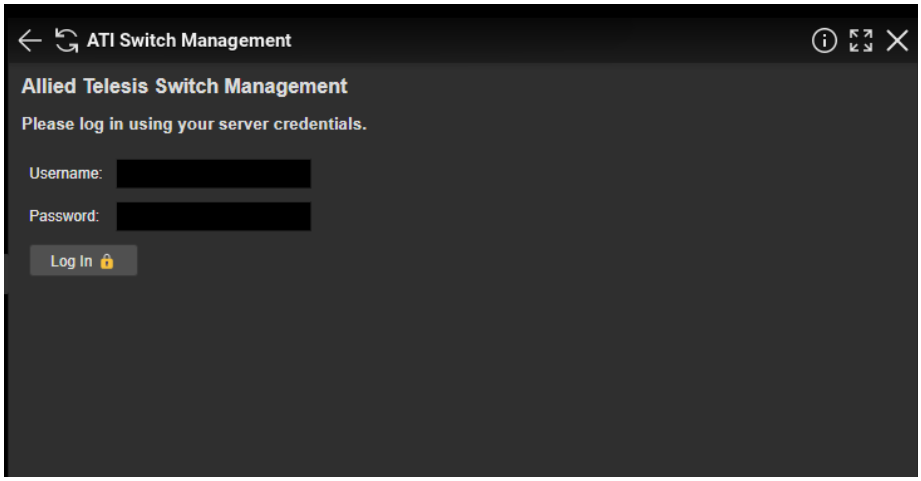

Figure 10. ATI Switch Management Login Window

The window can be resized by dragging an edge or expanded by using the arrows icon in the upper right corner.

5. Log in with your username and password for the DW Spectrum VMS server.

Note
Log in using an administration account for the DW Spectrum VMS server to manage the Allied Telesis switch. If you log in with an account that does not include administrative privilege, you can only manage surveillance cameras.

The next page appears. See Figure 11 on page 15.

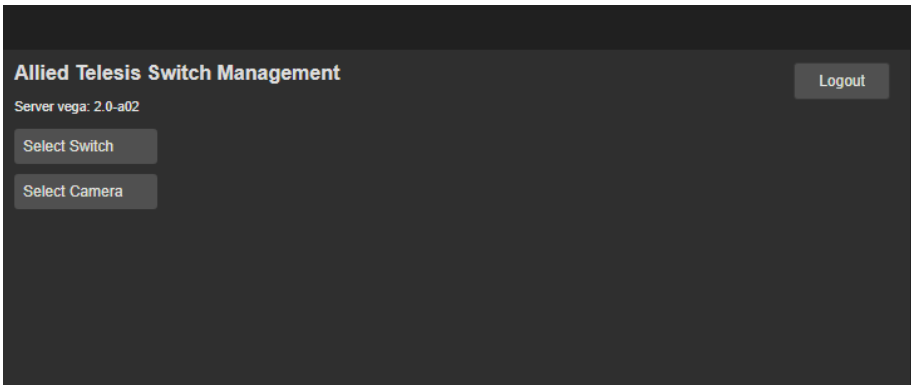

Figure 11. ATI Switch Management - Switch and Camera Selections

Adding a New Allied Telesis Switch

To add an Allied Telesis switch to the DW Spectrum VMS and configure the switch:

6. Click **Select Switch** > **Add New**. See Figure 12.

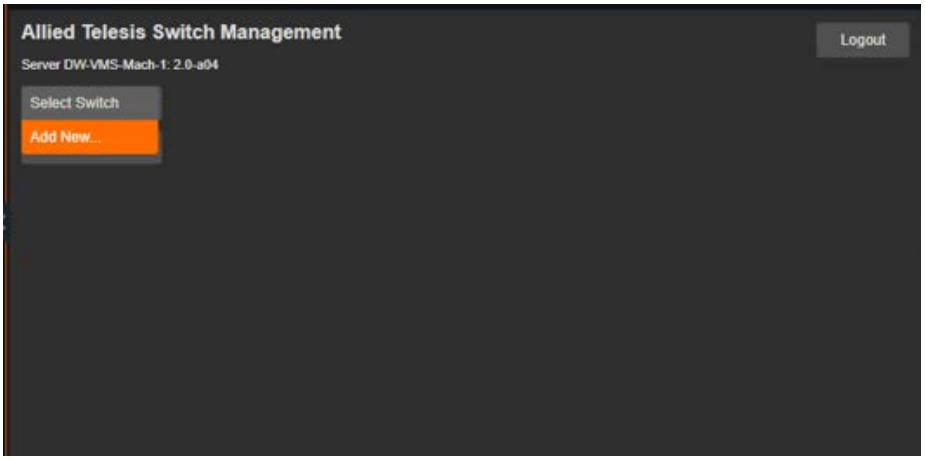

Figure 12. ATI Switch Management - Add a New Switch

The New Switch Entry window appears.

Note
When you add on a new surveillance camera to the Allied Telesis switch that has been configured in the DW Spectrum VMS and you want to associate the new camera to the Allied Telesis switch port, click **Select Switch** and select the switch name from the drop-down list. Go to Step 10.

7. Assign a unique name to the switch. See Figure 13.

Note
The switch that you are adding must have surveillance cameras connected to, and the cameras are managed by the DW Spectrum server.

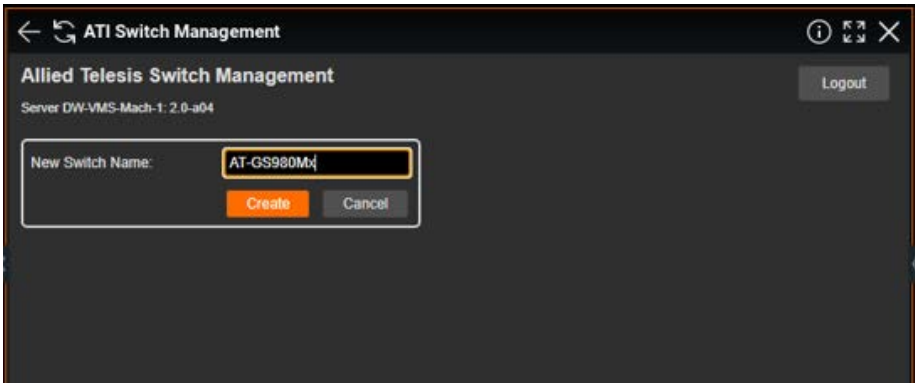

Figure 13. ATI Switch Management - Name a New Switch

8. Click **Create**.

   The next Allied Telesis Switch Management page appears. See Figure 14.

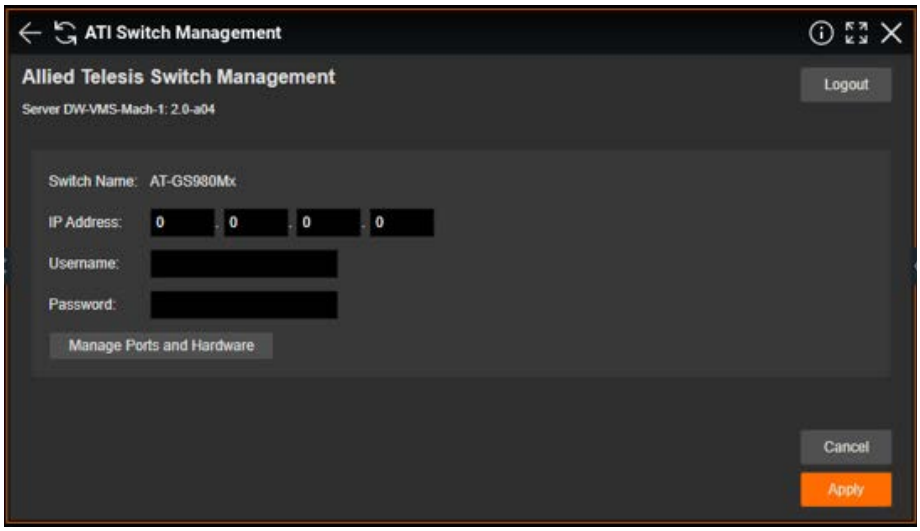

Figure 14. ATI Switch Management - Switch Configuration

9. Enter the IP address, username and password for the Allied Telesis switch. See Figure 15 on page 17.

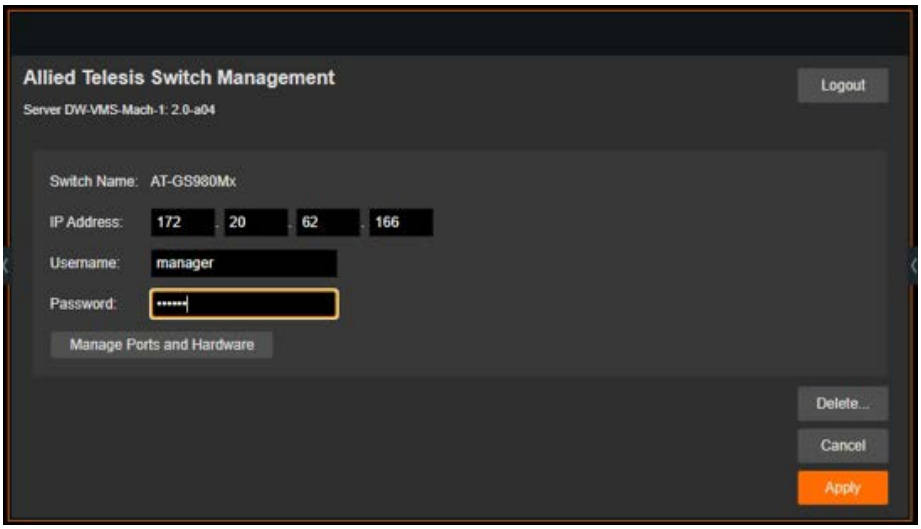

Figure 15. Setting the Switch IP Address and Login Credential

Associating Cameras to Allied Telesis Switch Ports

To associate the surveillance cameras to Allied Telesis switch ports, continue to the following steps:

10. On the same page as shown in Figure 15, click **Manage Ports and Hardware**.

    If the link to the switch is up, the status and information of the switch and switch ports are displayed on the same page. See Figure 16.

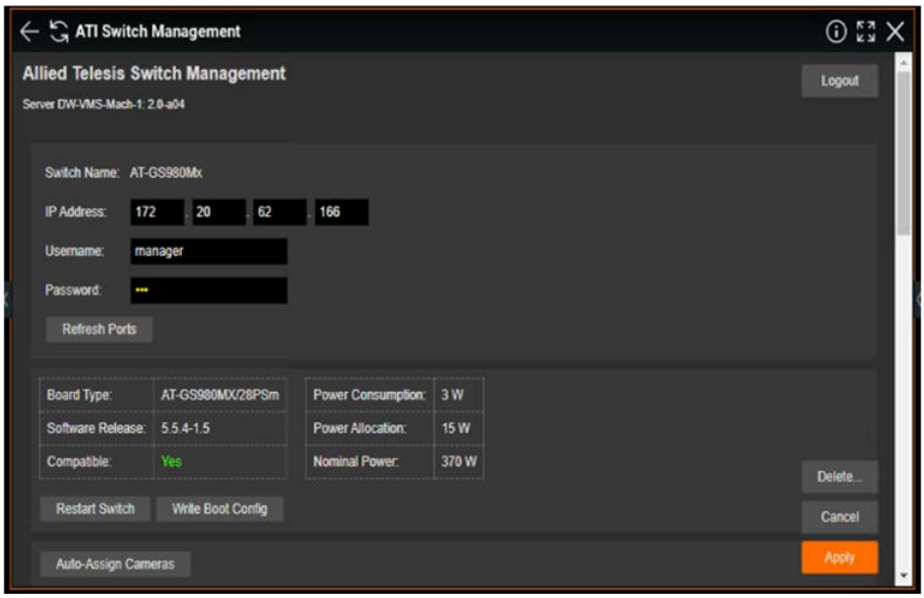

Figure 16. Displaying Switch Information

11. Scroll down to display the switch port information. See Figure 17.

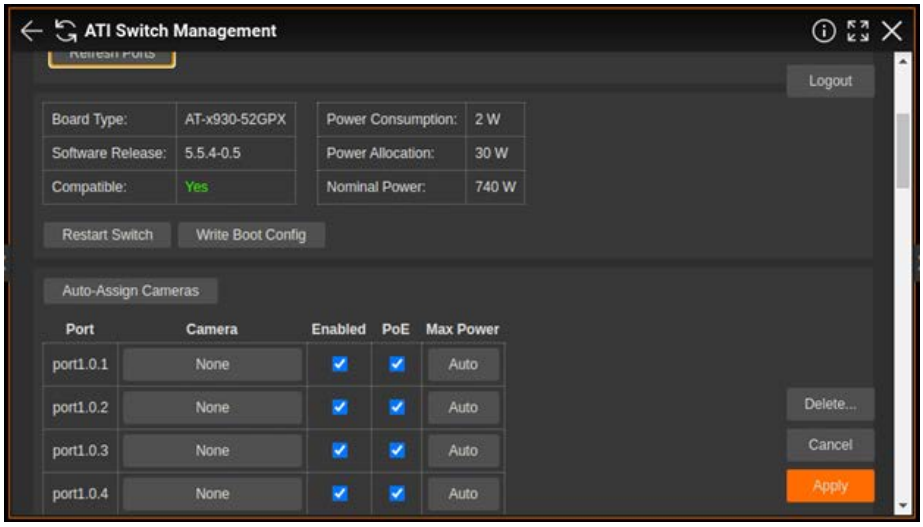

Figure 17. Displaying switch Port Information

Note
You can enlarge the window size to display port information as well as switch information.

12. To assign the cameras on the DW Spectrum VMS to the ports of the Allied Telesis switch:

    - To assign cameras automatically: click **Auto-Assign Cameras**.

      Auto-Assign Camera should detect the cameras that are up and running and associate them to the ports of the Allied Telesis switch. If cameras are not automatically assigned, you can assign them manually.

    - To assign a camera manually:

      a. click **None** in the **Camera** column and the row of the port that you want to assign the camera to.

      b. Select the name of the camera.

      If the camera is detected on the selected switch port, the camera name is shown in the drop-down list. See Figure 18 on page 19.

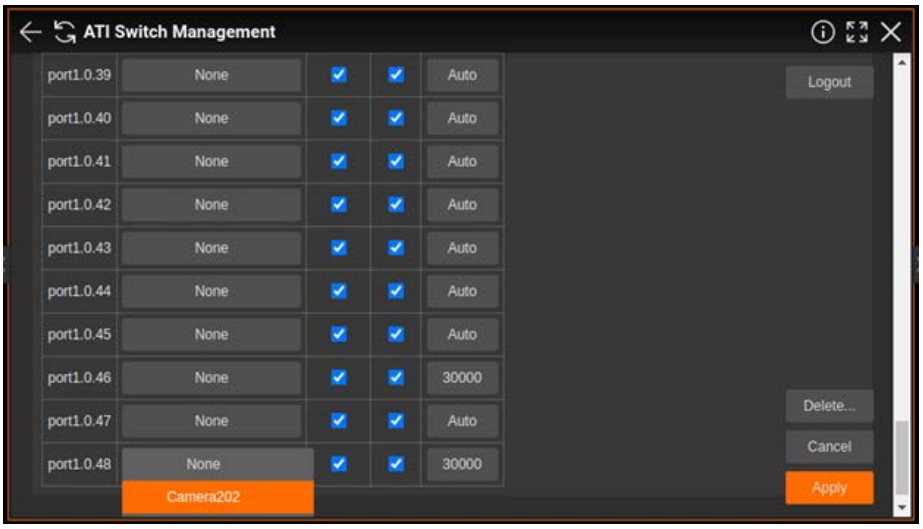

Figure 18. Manually Assigning a Camera to a Port

c. Select **Other** if no camera name is shown in the drop-down list. See Figure 19.

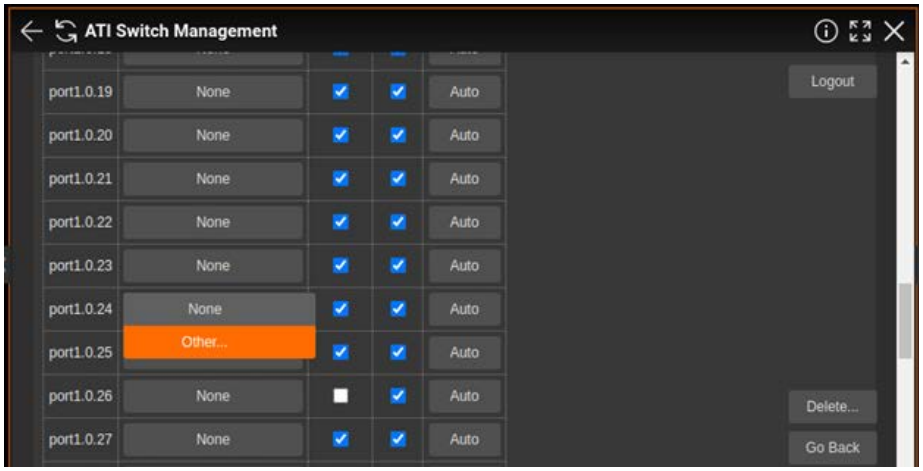

Figure 19. Manually Assigning a Camera to a Port - Other

The cameras that have been detected are listed in the drop-down list. See Figure 20 on page 20.

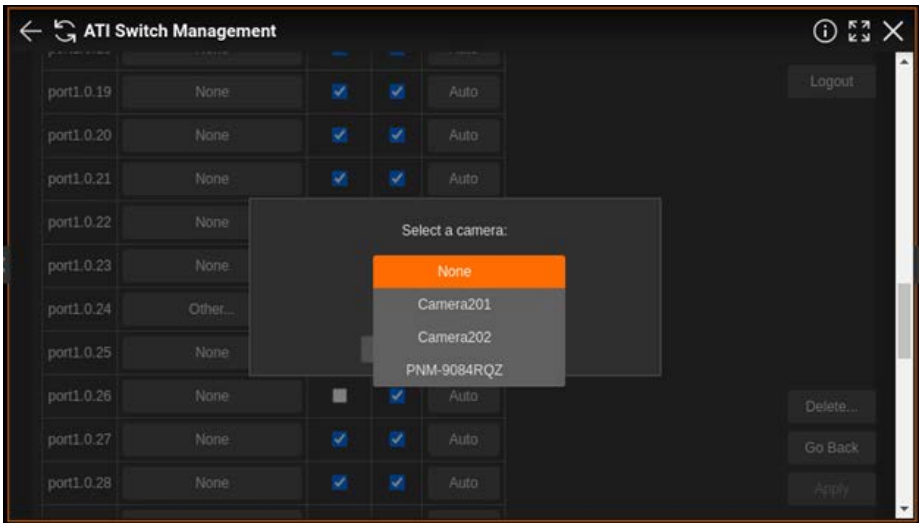

Figure 20. Manually Assigning a Camera to a Port - Camera Options

d. Select the name of the camera that you want to assign to the switch port.

   The camera is assigned to the switch port. If you have other cameras to be assigned to switch ports, go to Step a to repeat the process.

13. After assigning the cameras to switch ports is completed, click **Apply**.

    The “Switch update processed.” message appears.

14. Click **OK**.

    The switch ports where the cameras are associated are ready to be managed with the DW Spectrum client.

Note
During the process of associating the cameras to Allied Telesis switch ports, you can also change the settings of the switch ports. For more information, see “Enabling or Disabling Switch Ports, Managing Power Allocations, or Reassigning Cameras” on page 26.

Managing the Allied Telesis Switch Ports Connected to Cameras

After the process of associating cameras to switch ports through **Allied Telesis Switch Management** is completed, you can:

- Cycle power and/or data communication on the ports on the Allied Telesis switch to reset the surveillance cameras.
- View the current power usage on the switch ports.

  Go to "Resetting a Switch Port and Viewing the Power Usage of the Port" on page 21.

In the process of associating cameras to switch ports through **Allied Telesis Switch Management** or after the process is completed, you can:

- Enable or disable switch ports.
- Manage the power allocations of switch ports.
- Re-assign cameras to switch ports.

  Go to "Enabling or Disabling Switch Ports, Managing Power Allocations, or Reassigning Cameras" on page 26.

Resetting a Switch Port and Viewing the Power Usage of the Port

To disable and re-enable a switch port to reset the connected camera, or view the current power usage of the switch port:

1. Ensure that the cameras and Allied Telesis switch are cabled and powered on.
2. Start the DW Spectrum VMS client and log in.

   The DW Spectrum user interface (UI) appears as shown in Figure 8 on page 13.
3. Click the server that the DW Spectrum VMS is running.

   The DW Spectrum VMS UI starts. See Figure 9 on page 13.
4. Ensure that StreamConnect is installed and the cameras are associated with the Allied Telesis switch through **ATI Switch Management**.

   For more information, see "Installing StreamConnect" on page 9 and "Configuring ATI Switch and Cameras with StreamConnect" on page 12.

5. On the left navigation pane, double-click **ATI Switch Management** for the camera that you want to manage.

   The ATI Switch Management - Switch and Camera Selections page appears. See Figure 11 on page 15.

6. Click **Select Camera** and choose a camera on the drop-down list. See Figure 21.

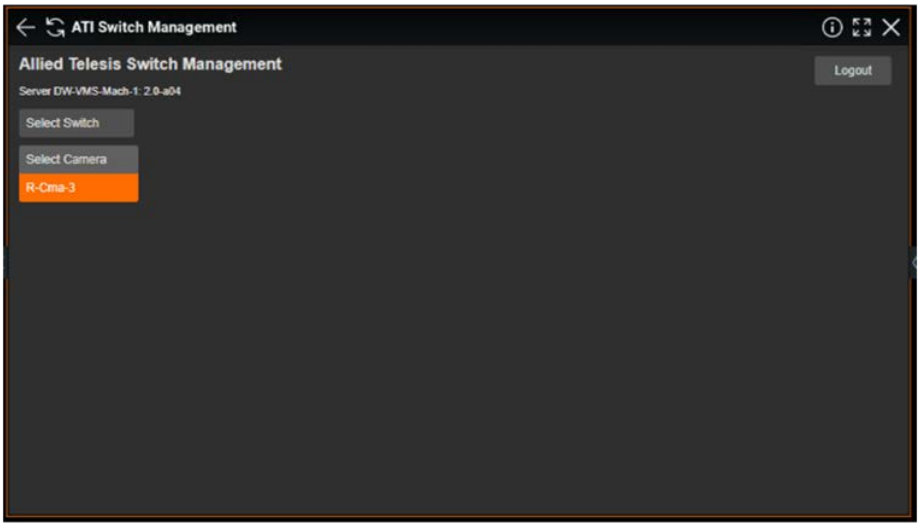

Figure 21. ATI Switch Management > Select Camera

The Allied Telesis Switch Port Control page appears. See Figure 22.

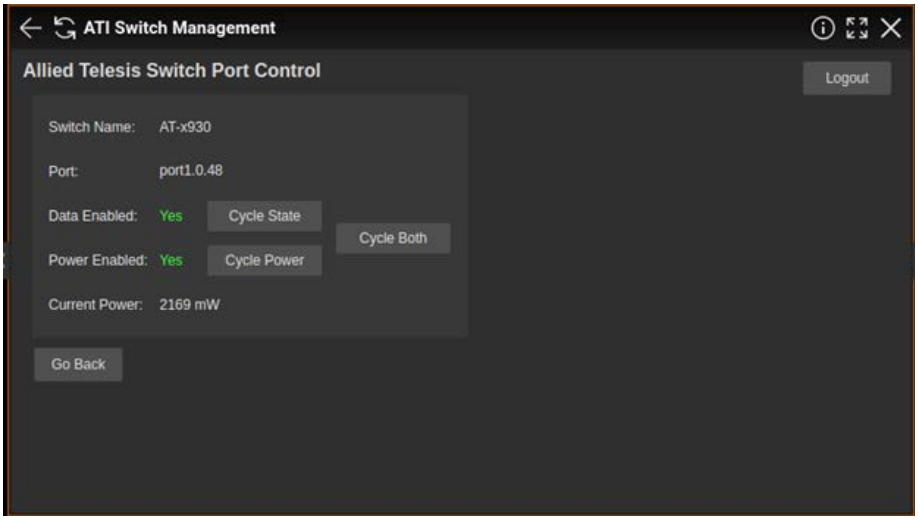

Figure 22. ATI Switch Management > Select Camera > Port Control

7. Click one of the following buttons as needed:
   - **Cycle State**: Disables the data communication on the port, waits for 30 seconds, and re-enables the port.
   - **Cycle Power**: Disables PoE on the port, waits for 30 seconds, and re-enables PoE on the port.
   - **Cycle Both**. Executes both **Cycle State** and **Cycle Power**.
8. After clicking one of the buttons, click **OK** in the confirmation message window.
9. Wait until the process is completed.

Here is another route to the **Allied Telesis Switch Port Control** page as shown in Figure 22 on page 22 to reset a switch port and view the power usage of the port.

1. Start the DW Spectrum VMS client and log in.
2. Click the server that the DW Spectrum VMS is running.
3. On the left navigation pane, right-click a camera and select **Camera Settings** on the drop-down list. See Figure 23.

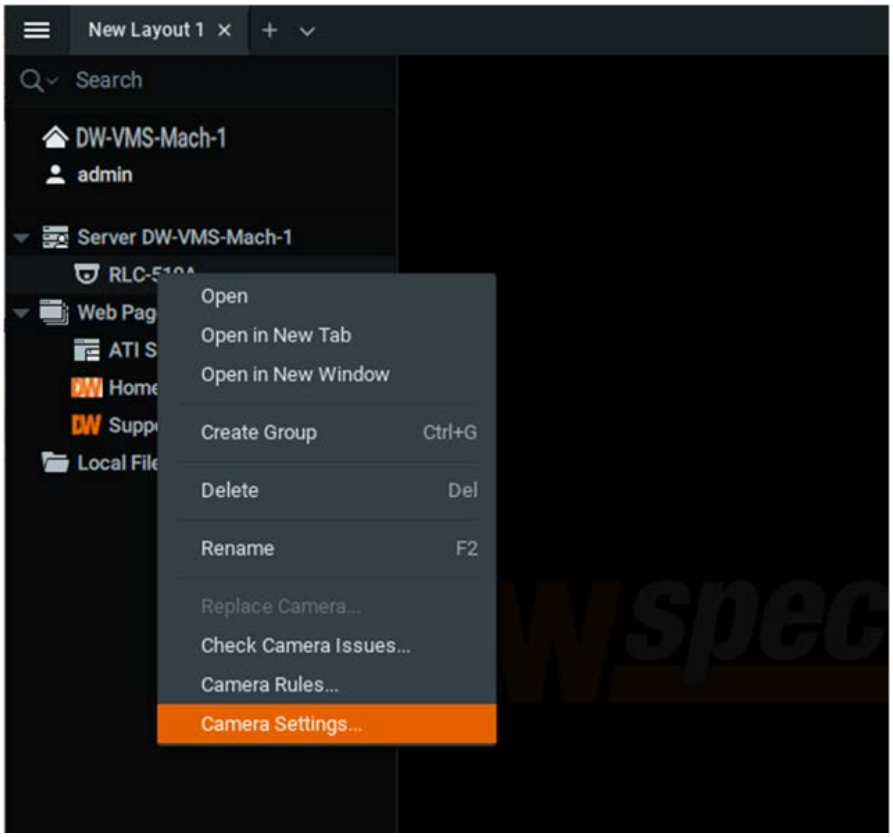

Figure 23. Camera > Camera Settings

The Camera Settings page appears.

4. Click **Plugins** on the menu bar. See Figure 24.

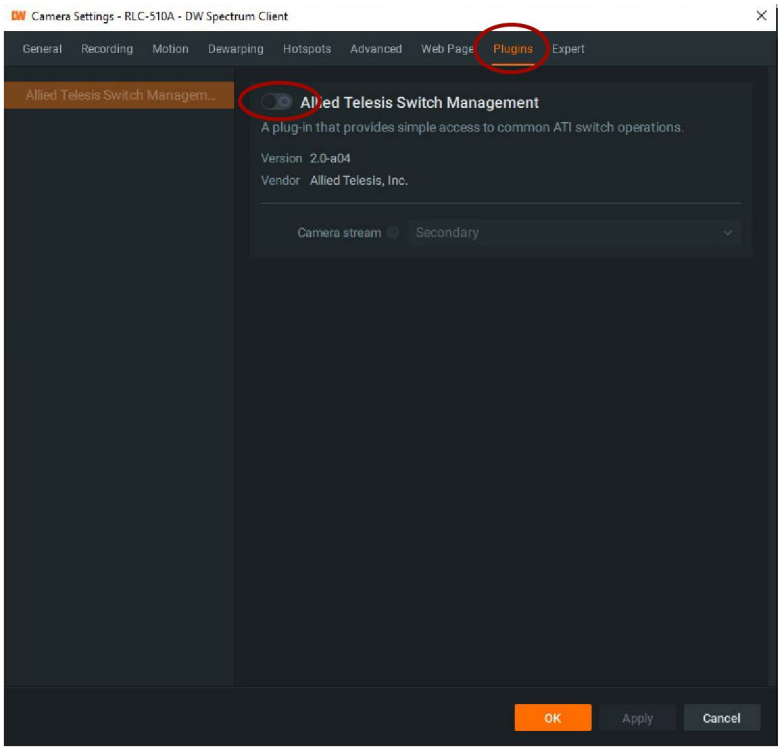

Figure 24. Camera > Camera Settings > Plugins

5. On the left navigation pane, select **Allied Telesis Switch Management**.

6. Enable **Allied Telesis Switch Management** by turning on the toggle button.

7. Click **Apply**.

   The **Allied Telesis Switch Management** is enabled and the page is updated. See Figure 25 on page 25.

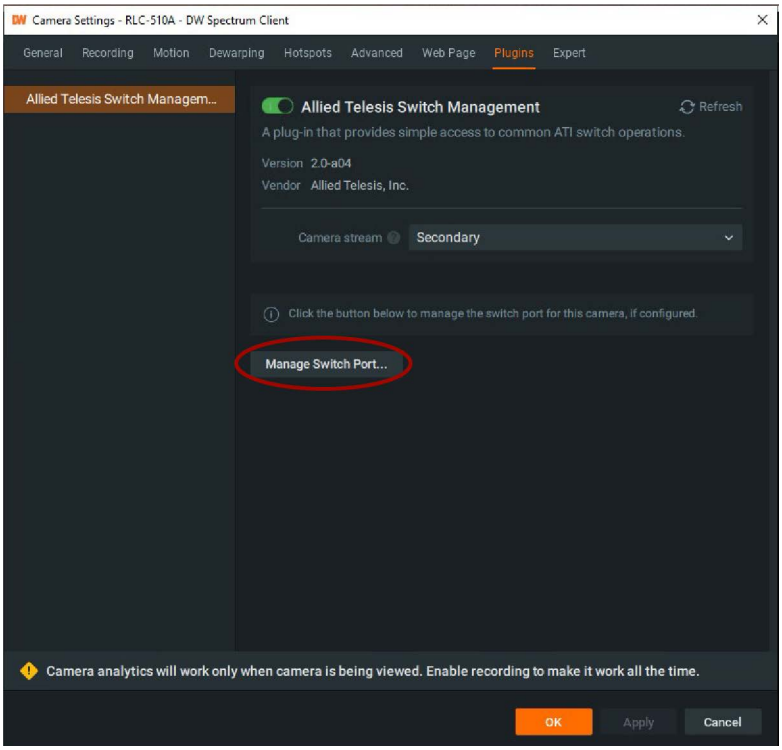

Figure 25. Camera > Camera Settings > Plugins > Toggle Button On > Apply

8. Click **Manage Switch Port**.

> **Note**
> You can click **Manage Switch Port** when StreamConnect is installed and cameras are associated to Allied Telesis switch ports.

The **Allied Telesis Switch Port Control** page appears. See Figure 26 on page 26.

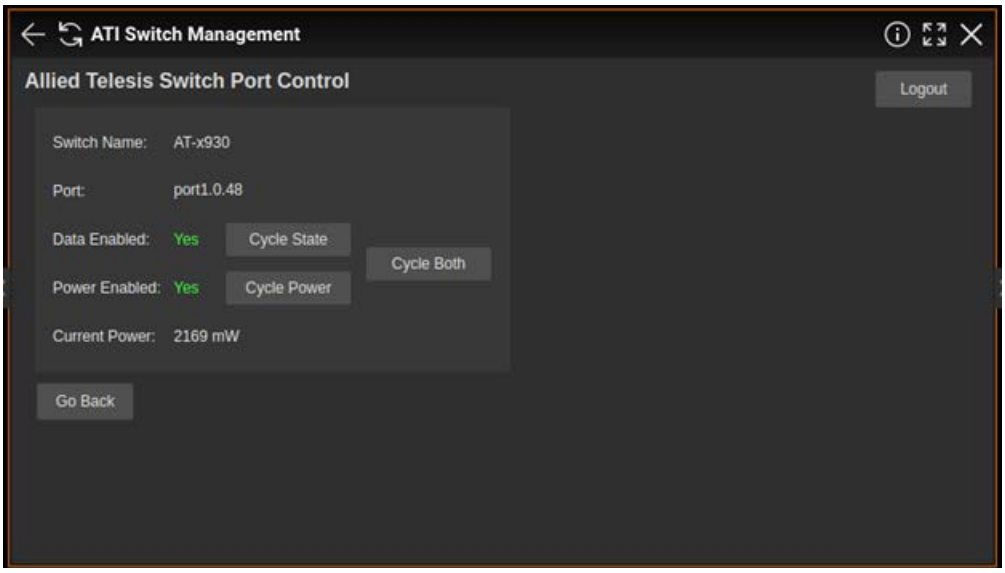

Figure 26. Camera > Camera Settings > Plugins > Toggle Button On > Manage Switch Port

9. To reset the switch port, go to Step 7 in “Resetting a Switch Port and Viewing the Power Usage of the Port” on page 21.

Enabling or Disabling Switch Ports, Managing Power Allocations, or Reassigning Cameras

To enable or disable the switch port, or manage power allocations of the switch ports:

1. Ensure that the cameras and Allied Telesis switch are cabled and powered on.
2. Start the DW Spectrum VMS client and log in.

   The DW Spectrum user interface (UI) appears as shown in Figure 8 on page 13.
3. Click the server that the DW Spectrum VMS is running.

   The DW Spectrum VMS UI starts. See Figure 9 on page 13.
4. Ensure that StreamConnect is installed and the cameras are associated with the Allied Telesis switch through **ATI Switch Management**.

   For more information, see “Installing StreamConnect” on page 9 and “Configuring ATI Switch and Cameras with StreamConnect” on page 12.
5. On the left navigation pane, double-click the **ATI Switch Management** for the camera that you want to manage.

The ATI Switch Management main menu appears. See Figure 11 on page 15.

6. Click **Select Switch** and choose a switch on the drop-down list. See Figure 27.

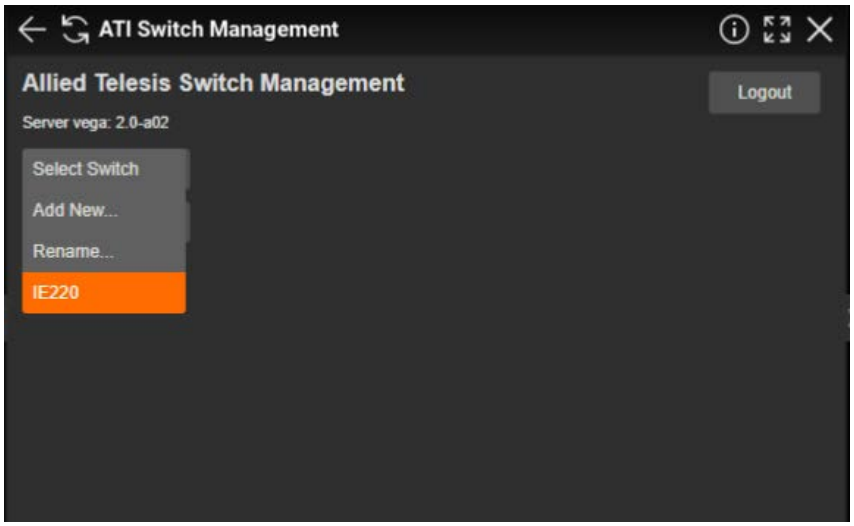

Figure 27. ATI Switch Management > Select Switch

The Allied Telesis Switch Port Control page appears. See Figure 28.

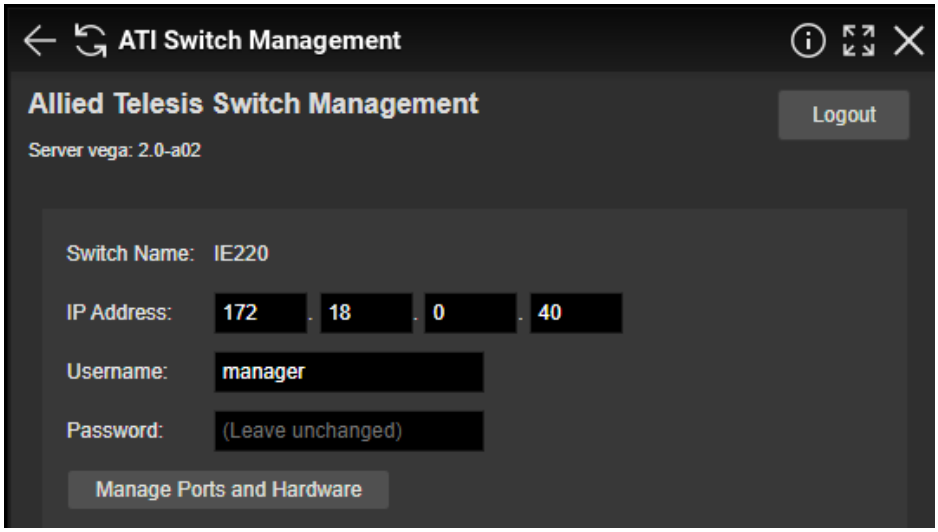

Figure 28. ATI Switch Management > Select Switch > Switch Management

7. Click **Manage Ports and Hardware**.

   The status and information of the switch and switch ports are displayed on the same page. See Figure 29 on page 28.

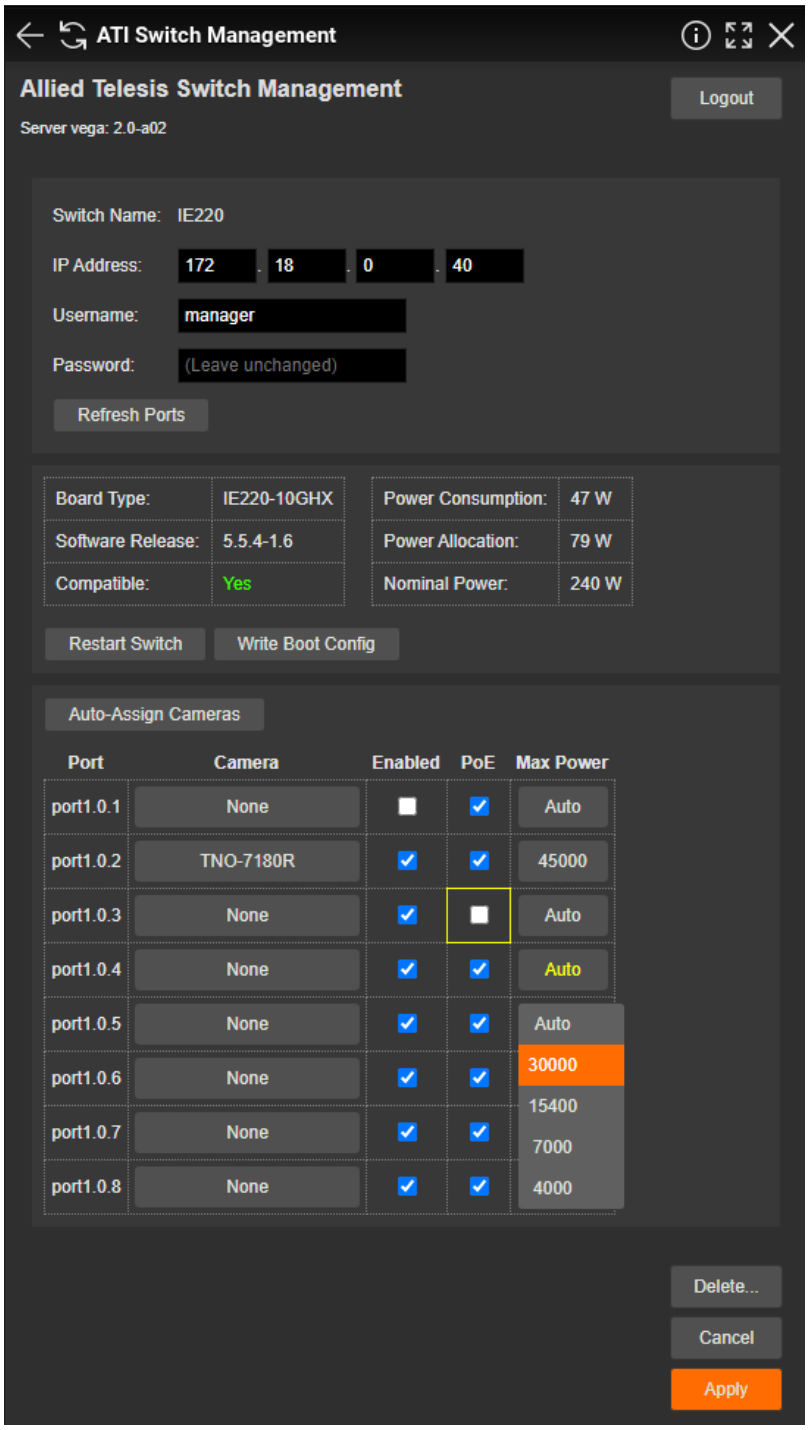

Figure 29. ATI Switch Management > Select Switch > Manage Ports and Hardware

8. To manage the switch ports:

   - To enable or disable the data communication on a port: click the check mark on the **Enabled** column and the row of the switch port that you want to manage.
   - To enable or disable PoE on a port: click the check mark on the **PoE** column and the row of the switch port that you want to manage.
   - To change the maximum power assigned to a port:

     a. Click the area on the **Max Power** column and the row of the switch port that you want to manage.

     b. Select an option on the drop-down list. See Figure 29 on page 28.

   - To reassign the cameras to switch ports, see "Associating Cameras to Allied Telesis Switch Ports" on page 17.

9. Click **Apply**.

   The changes are saved.

Troubleshooting

If a link to **ATI Switch Management** on the left navigation pane is accidentally changed or deleted, the link can be recovered with the following automatic or manual method:

- “Automatically Recovering Links to ATI Switch Management” on this page
- “Manually Recovering Links to ATI Switch Management” on page 32

Note
Allied Telesis recommends using the automatic method to recover **ATI Switch Management.**

Automatically Recovering Links to ATI Switch Management

To correct the link automatically:

1. Ensure that the cameras and Allied Telesis switch are cabled and powered on.
2. Start the DW Spectrum VMS client and log in.

   The DW Spectrum UI appears as shown in Figure 8 on page 13.
3. Click the server that the DW Spectrum VMS is running.

   The DW Spectrum VMS UI starts. See Figure 9 on page 13.
4. Ensure that StreamConnect is installed and the cameras are associated with the Allied Telesis switch through **ATI Switch Management**.

   For more information, see “Installing StreamConnect” on page 9 and “Configuring ATI Switch and Cameras with StreamConnect” on page 12.
5. Right-click the server and select System Administration on the drop-down list. See Figure 30 on page 31.

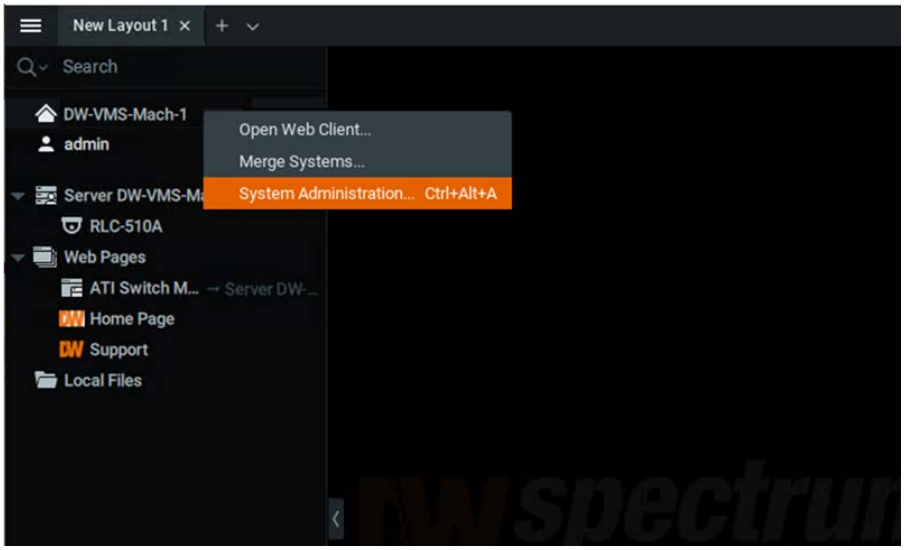

Figure 30. Server > System Administration

The System Administration window appears.

6. Click **Plugins** on the menu bar. See Figure 31.

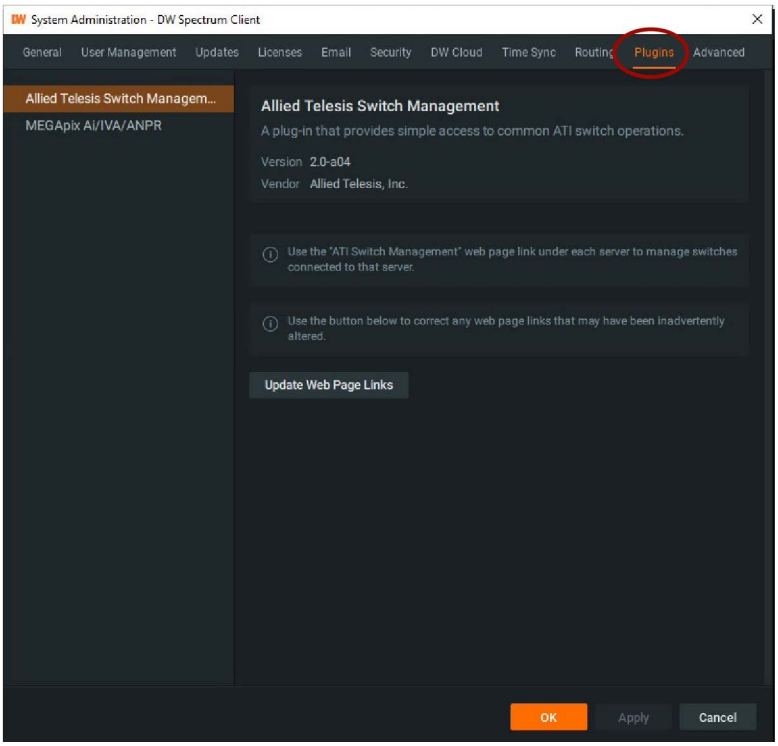

Figure 31. Server > System Administration > Plugins

7. Click **Update Web Page Links**.

The links are automatically recovered.

Manually Recovering Links to ATI Switch Management

To correct the links manually:

1. Ensure that the cameras and Allied Telesis switch are cabled and powered on.
2. Start the DW Spectrum VMS client and log in.

   The DW Spectrum UI appears as shown in Figure 8 on page 13.
3. Click the server that the DW Spectrum VMS is running.

   The DW Spectrum VMS UI starts. See Figure 9 on page 13.
4. Ensure that StreamConnect is installed and the cameras are associated with the Allied Telesis switch through **ATI Switch Management**.

   For more information, see “Installing StreamConnect” on page 9 and “Configuring ATI Switch and Cameras with StreamConnect” on page 12.
5. Right-click **ATI Switch Management** and select **Web Page Settings** on the drop-down list. See Figure 32.

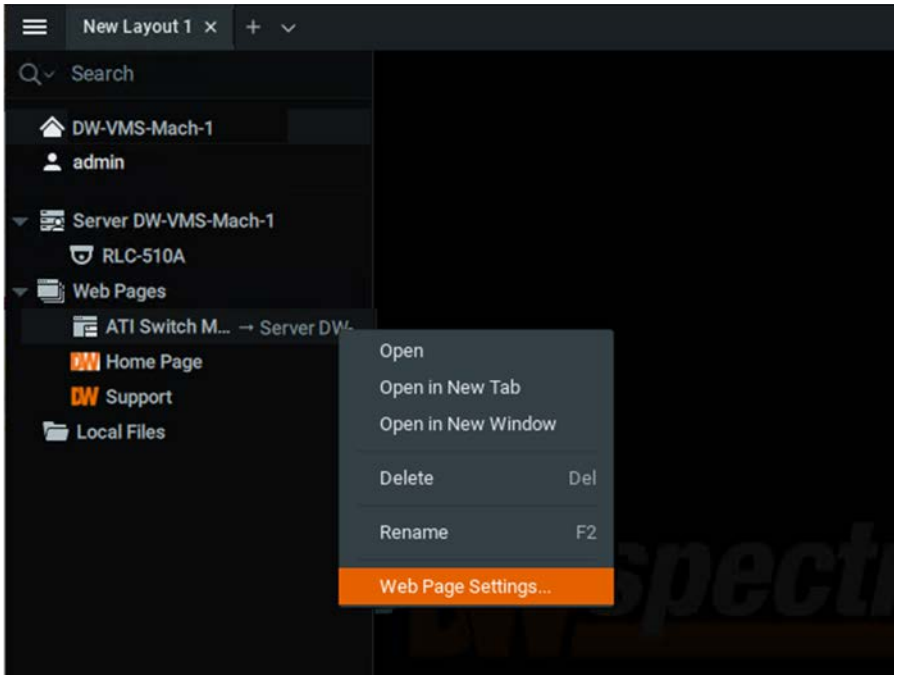

Figure 32. ATI Switch Management > Web Page Settings

The System Administration window appears. See Figure 33 on page 33.

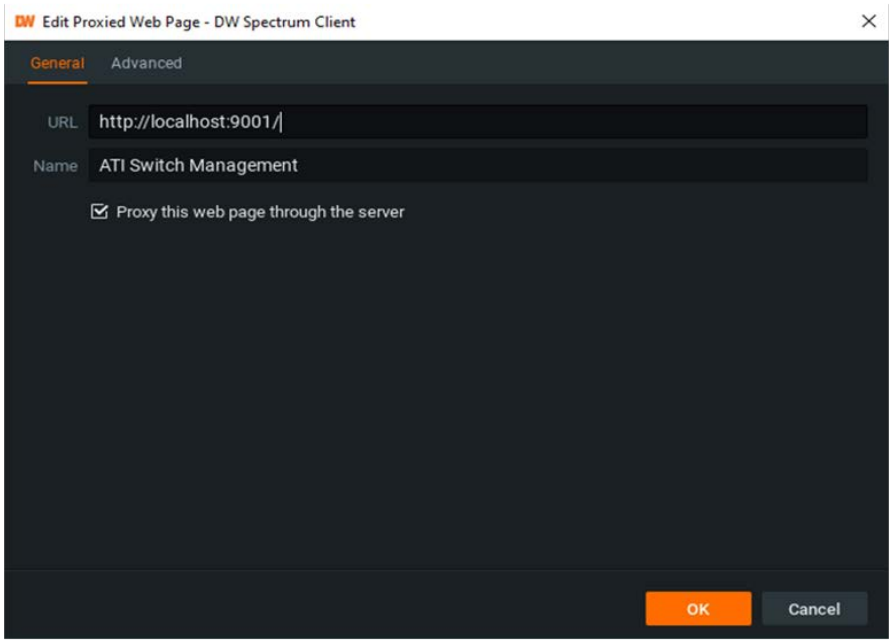

Figure 33. Edit Proxied Web Page Window

6. Ensure that the following fields are correct:
   - **URL** must contain the following exact text:

     `http://localhost:9001`
   - **Name** must contain the following exact text:

     ATI Switch Management
   - **Proxy this webpage via server** must be checked.
7. Click **OK**.

   The links are recovered.