

# BlackjackAi™

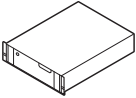
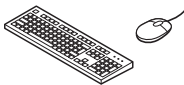
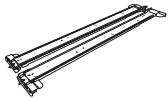


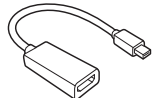
Powered by DW Ai Appliance

Model	Description
DW-BJAiARA2	2U rack mount workstation analytics appliance with dual sensor and NVIDIA RTX A2000 12GB card
DW-BJAiAR2PA2	2U rack mount workstation analytics appliance with dual sensor and dual NVIDIA RTX A2000 12GB cards
DW-BJAiARA4	2U rack mount workstation analytics appliance with dual sensor and NVIDIA RTX A4000 card
DW-BJAiAR2PA4	2U rack mount workstation analytics appliance with dual sensor and dual NVIDIA RTX A4000 cards



Default login information for the server's OS

Username: <b>dwuser</b>	Password: <b>Dw5pectrum</b>
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WHAT'S IN THE BOX								
Rack™ Server		1	Keyboard and Mouse		1 set	Rail Kit		1 set
Quick Start Guide		1	Power Cable		2	Mini-DP to True HD Adapter		1

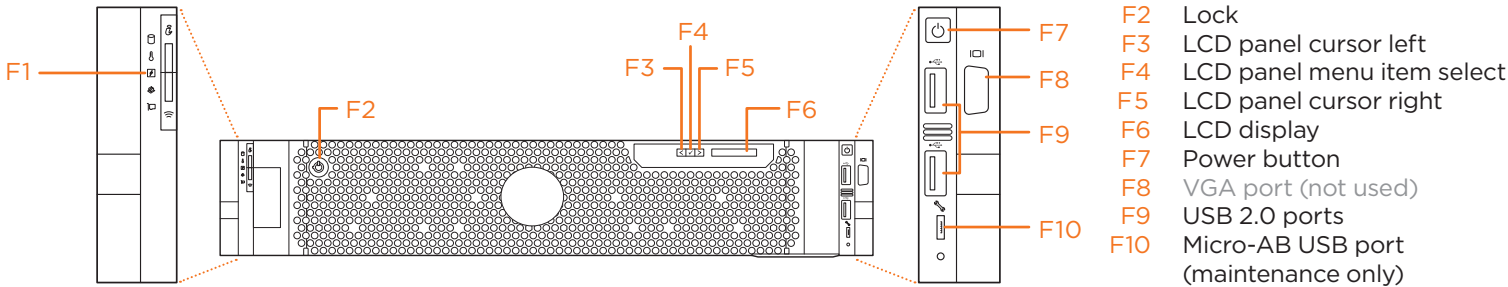
**NOTE:** Download all your support materials and tools in one place.

1. Go to: <http://www.digital-watchdog.com/support-download/>.
2. Search your product by entering the part number in the 'Search by Product' search bar. Results for applicable part numbers will populate automatically based on the part number you enter.
3. Click 'Search'. All supported materials, including manuals, Quick start guides (QSG), software and firmware will appear in the results.

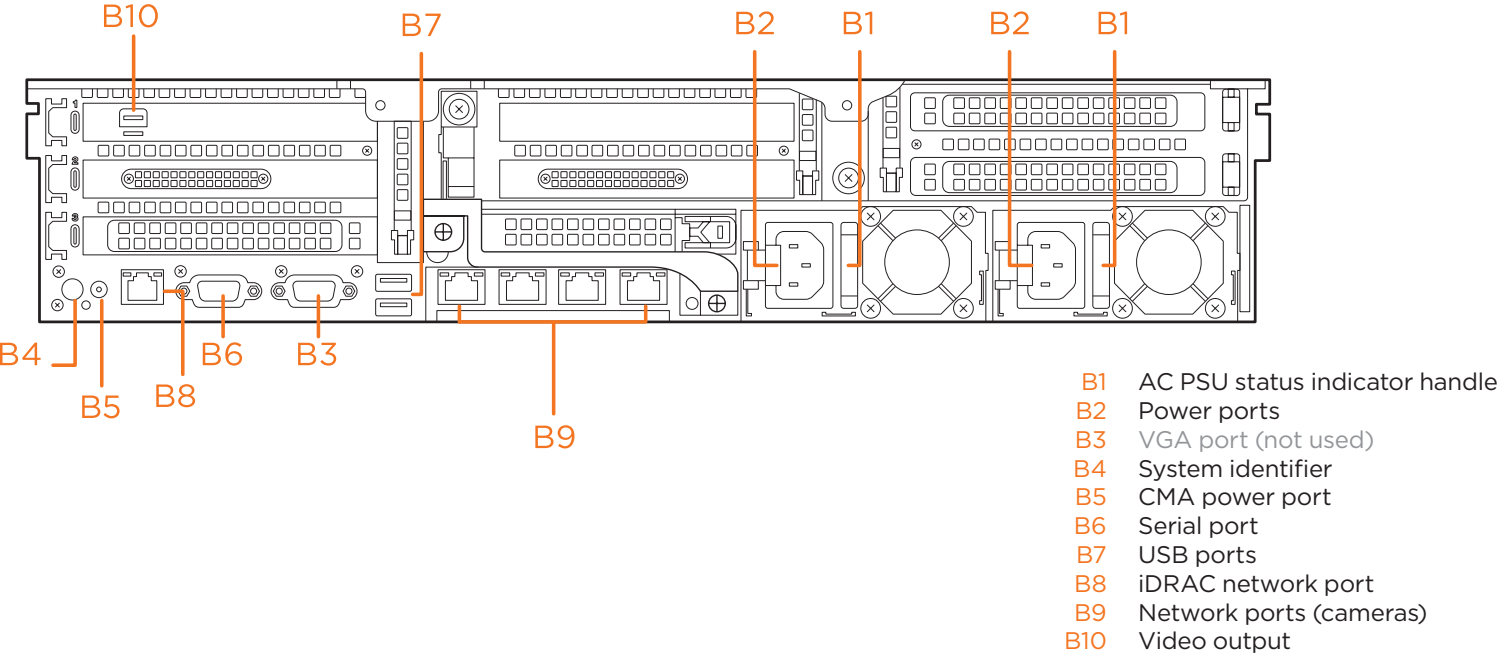
**Attention:** This document is intended to serve as a quick reference for initial setup.  
See the DW Spectrum® full manual for more information on features and functionality.

BLACKJACK® RACK™ HARDWARE OVERVIEW

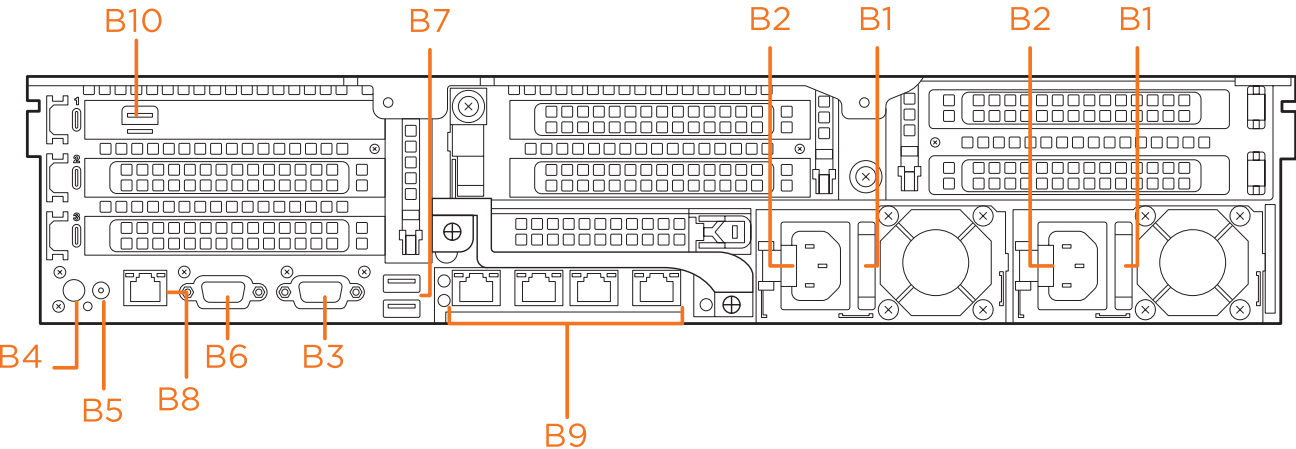
FRONT



BACK: DW-BJAiARA2 AND DW-BJAiAR2PA2 MODELS



BACK: DW-BJAiARA4 AND DW-BJAiAR2PA4 MODELS



Default login information for the server's OS

Username: <b>dwuser</b>	Password: <b>Dw5pectrum</b>
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## SPECIFICATIONS

PART NUMBER		DW-BJAiARA2	DW-BJAiAR2PA2	DW-BJAiARA4	DW-BJAiAR2PA4
Included DW Ai Server Licenses		4 channel(DW-DWAiSLSC004)			
Form Factor		2U Rack mount			
Operating System	Windows® 10	Windows 10 IoT LTSC			
	OS on SSD	2x 512GB M.2 (RAID1)			
CPU		Intel XEON Silver 4215R	2 x Intel XEON Silver 4215R	Intel XEON Silver 4215R	2 x Intel XEON Silver 4215R
Memory		32GB	64GB	32GB	64GB
Ethernet Port		4 x 1Gb Ethernet ports			
System	Max # of analytic streams(secondary)	Up to 24	Up to 48	Up to 32	Up to 64
	USB interface	Yes	Yes	Yes	Yes
Video-out	Outputs	1x mini Display Port, for system configuration		1x Display Port, for system configuration	
	Graphics Card	NVIDIA RTX A2000 12GB	2 x NVIDIA RTX A2000 12GB	NVIDIA RTX A4000	2 x NVIDIA RTX A4000
Preloaded Analytic software		DW Ai Server			
Ai Configuration Tool Supported OS		Cross-platform - Windows® and Linux Ubuntu®			
Keyboard and mouse		Included			
Rail kit		Included			
Power supply		1100W Redundant**			
Operating temperature (room)		41°F-104°F (5°C-40°C)			
Operating humidity		20-90% RH	5-85% RH	20-90% RH	5-85% RH
Dimension (WxDxH)		3.41" x 17.0" x 28.37" (29.78" with bezel); 86.8mm x 482mm x 715.5mm (751.3mm with bezel)			
Other certification		NDA, TAA, UL, FCC and CE			
Warranty		5 year HW warranty with next day on-site repair after remote diagnosis			

\* UPS recommended

\*\* After remote diagnosis

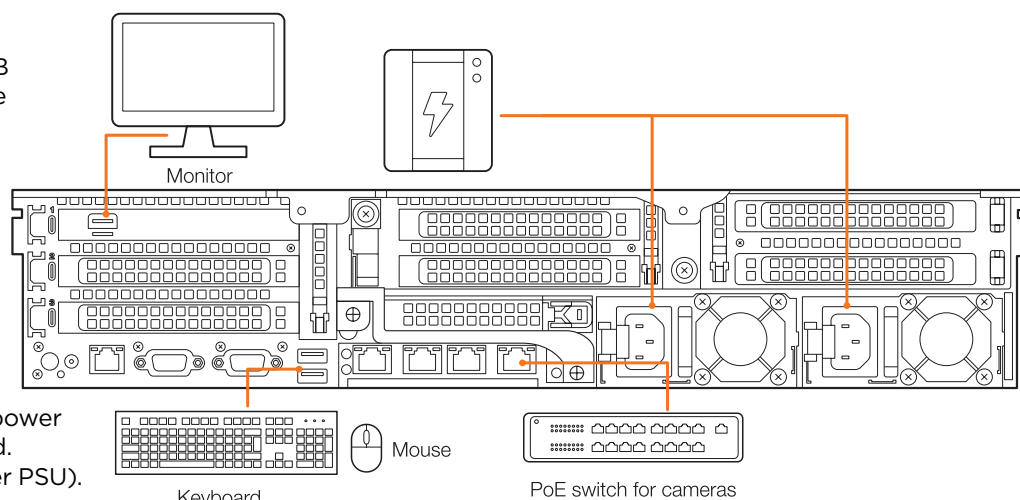
Specifications and components mentioned are subject to change without notice.

## SETTING UP THE APPLIANCE

### STEP 1: Connect external devices, power and network.

1. Connect a monitor, USB keyboard, USB mouse and network cable to one of the Ethernet ports (B9 on the diagram). Configure the camera's network first, then configure the server's local network.

**NOTE** The ports positions on the diagram below may vary. See page 2 for detailed back panel breakdown for each model.



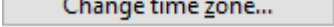
2. Connect the server to an appropriate power source. A UPS system is recommended. 1500VA or higher is recommended (per PSU).
3. Power up the server if the server does not turn on automatically by pressing the power button on the front of the server (F7 on the diagram). Connecting the power cable to a live power source may turn on the server on automatically.

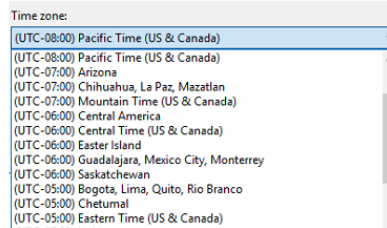
## STEP 2: Configure date and time

### Windows<sup>®</sup>



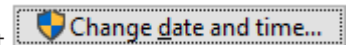
1. Double-click on the date and time icon on the desktop.

2. Change time zone if it is not correct  (default is UTC-08:00 Pacific Time).

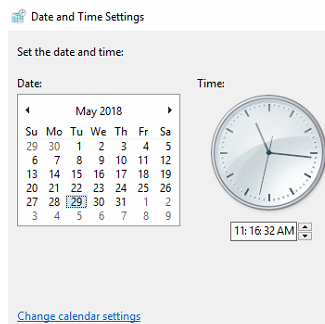


3. Press OK after selecting the correct time zone.

4. Click “Change date and time...” to update the date and time if they are not correct.



- Verify the time zone before updating the date and time. Time may show 2 or 3 hours off due to an incorrect time zone.



5. Press OK after adjusting to the correct date and/or time. Press OK to close the date and time when done.

## STEP 3: Configure network

Please have the following information ready before starting the network configuration.

	Camera network	Local network (LAN)
IP address		
Subnet mask / Netmask		
Default gateway / Gateway	Not applicable	
DNS servers	Not applicable	

\* The camera network and local network cannot be on the same network.

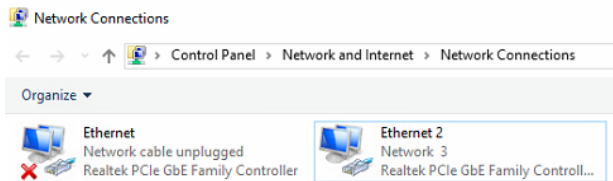
**NOTE** The Blackjack® server's network settings are set to DHCP as default.

**NOTE** If you are not sure what information to enter, contact your Network Administrator or Internet Service Provider for the information.

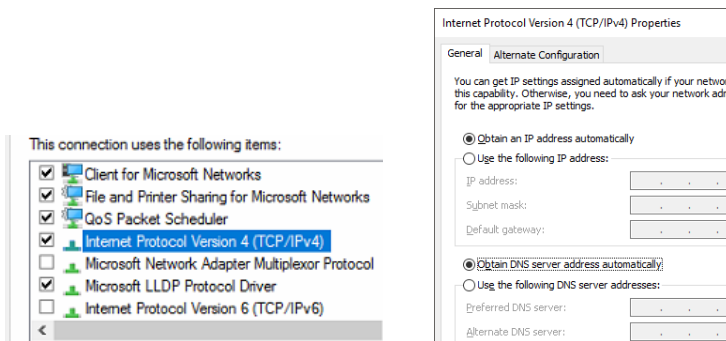
### Windows®



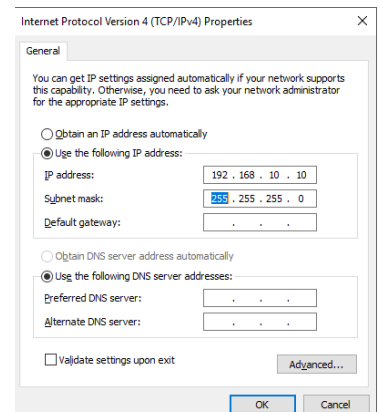
1. Double click on the “Network Connections” on the desktop.
2. Right-click on “Ethernet with cable connected” and click “Properties”.



3. Select “Internet Protocol Version 4 (TCP/IPv4)” and click “Properties”.

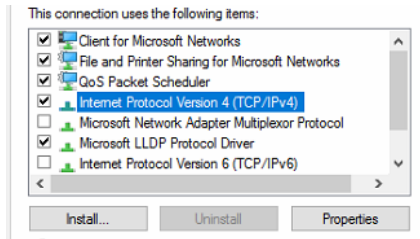


4. Select “Use the following IP address” (Use the following DNS server addresses will be selected automatically).
5. Enter the IP address and Subnet mask of the camera network. (Do not enter anything for the default gateway, preferred DNS server and alternate DNS server).
6. Click OK to close then click close to go back to network connections.

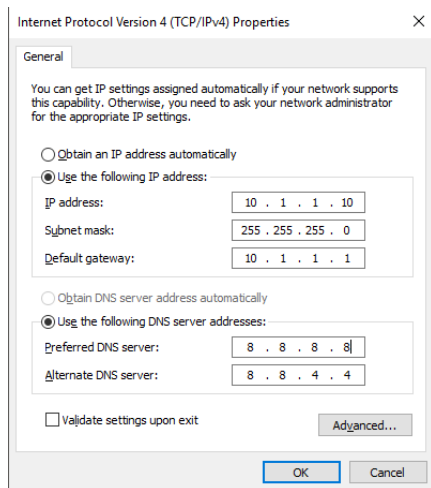


## Local Network

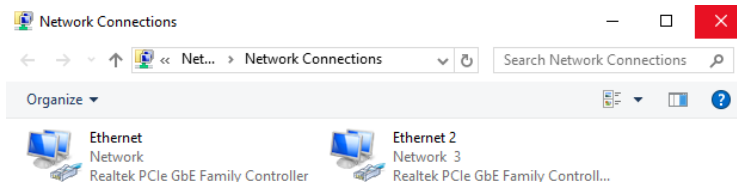
7. Right-click on the other Ethernet, the one with network cable unplugged, and click “Properties”.
8. Select “Internet Protocol Version 4 (TCP/IPv4)” and click “Properties”.



9. Select “Use the following IP address” (Use the following DNS server addresses will be selected automatically).
10. Enter IP address and subnet mask of the camera network.



11. Click OK to close then click close to go back to network connections.
12. Connect a network cable to the Ethernet port B2 (1.5G) and B7 (2.5G) on the diagram (page 2) to the switch on the local network.
13. Close the network connections dialog.



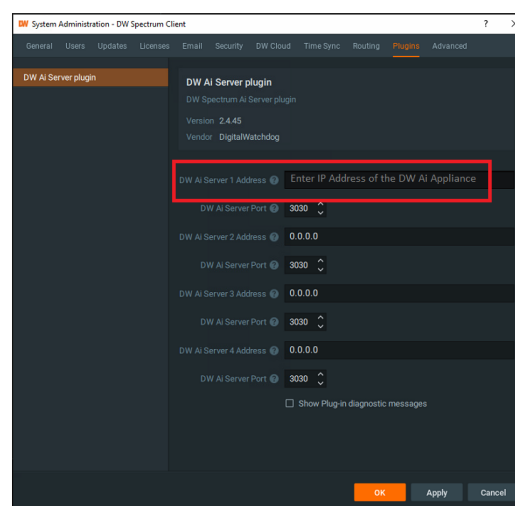
## Connecting to DW Ai Server from DW Spectrum

### STEP 1: Download and copy plugin file to DW Spectrum's plugin folder.

Windows: Download and copy dw\_ai\_server\_plugin.dll to "C:\Program Files\Digital Watchdog\DW Spectrum\MediaServer\plugins".

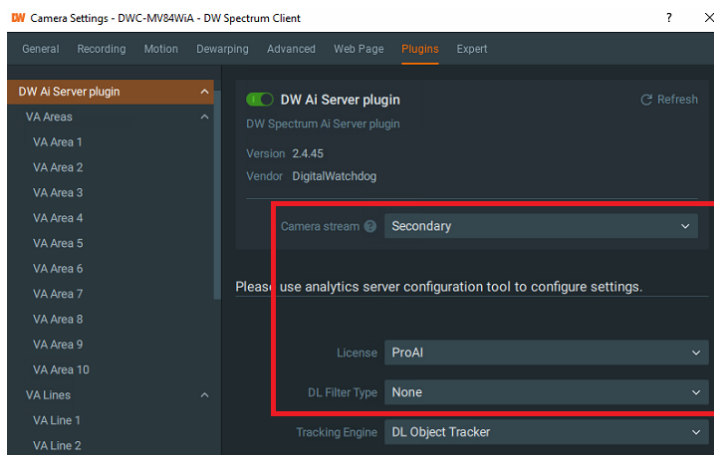
Linux: Download and copy libdw\_ai\_server\_plugin.so to "/opt/digitalwatchdog/mediaserver/bin/plugin/".

- 1) Reboot the DW Spectrum Mediaserver
- 2) Go to Plugin tab from System Administrator then select DW Ai Server Plugin from the Plugin list on the left pane.
- 3) Enter the IP address of the Blackjack Ai Appliance.
- 4) Click OK or Apply to save the setting.



### STEP 2: Enable DW Ai Plugin on cameras.

- 1) Open Camera Settings of the camera that the analytics will be processed by DW Ai server
- 2) Enable DW Ai Server Plugin (\*must keep the Camera stream, License and DL Filter Type as default as shown)



- 3) Click Apply to save the configuration.
- 4) Create analytic rules.

## Setting Up the DW Ai Server Configuration Tool

While some camera settings can be configured through the DW Spectrum IPVMS Client, the DW Ai Server Configuration Tool can be used to provide a complete analytic user experience during the configuration process of the DW Ai Server.

### STEP 1: Logging in with the DW Ai Server Configuration Tool

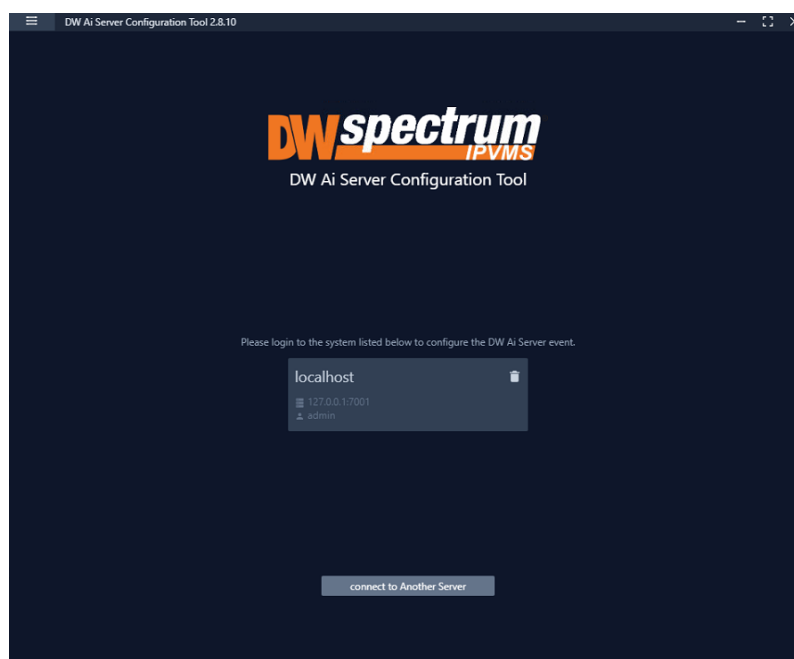
To begin setting up the DW Ai Server Configuration Tool:

1) Launch the DW Ai Server Configuration Tool. There is an application shortcut on the desktop.



Select the DW Ai Server that you want to connect with and log in with the local 'admin' user profile.

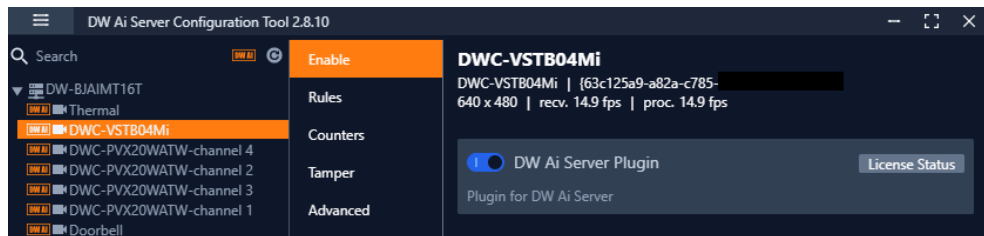
**NOTE:** If connecting the DW Ai Server Configuration Tool to the DW Spectrum Server is hindered by the message “Unauthorized. Please check the access credentials and try again,” after changing the user password, enable the Digest Authentication setting of the user profile in the DW Spectrum Client.





2) Once you are logged in and connected to the DW Ai Server through the DW Ai Server Configuration Tool, a list will show all added cameras in the left-side panel.

To view camera analytic rules and configuration, enable the DW Ai Server Plugin toggle.

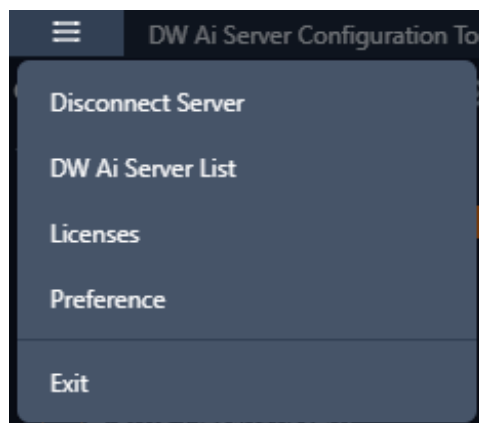


Once enabled, you will find the following features in the left-side panel:

- **Search:** This search box can be used to filter the camera list based on the entered device name.
- **DW Ai (toggle):** The DW Ai button toggles the camera list between showing all cameras on the DW Spectrum System or just the cameras that have the plug-in enabled. This toggle appears at the top of the camera list beside the search bar. While enabled, the toggle will appear in orange.
- **Refresh:** This button refreshes the list of cameras from DW Spectrum IPVMS when it is clicked.
- **Device List:** A list of DW MEGApix Ai and standard IP devices are listed in the Resource Tree organized by server. While the DW Ai toggle is active, only Ai devices will be listed.

Select the Main Menu to display the menu options:

- **Disconnect Server:** Disconnects the current session with your DW Spectrum IPVMS Server.
- **DW Ai Server List:** Displays a list of the DW Ai Server(s) that your DW Spectrum system is configured to use.
- **Licenses:** Displays a list of the licenses available from the DW Ai Servers.
- **Preference:** Displays a list of the DW Ai Server Configuration Tool's advanced options.



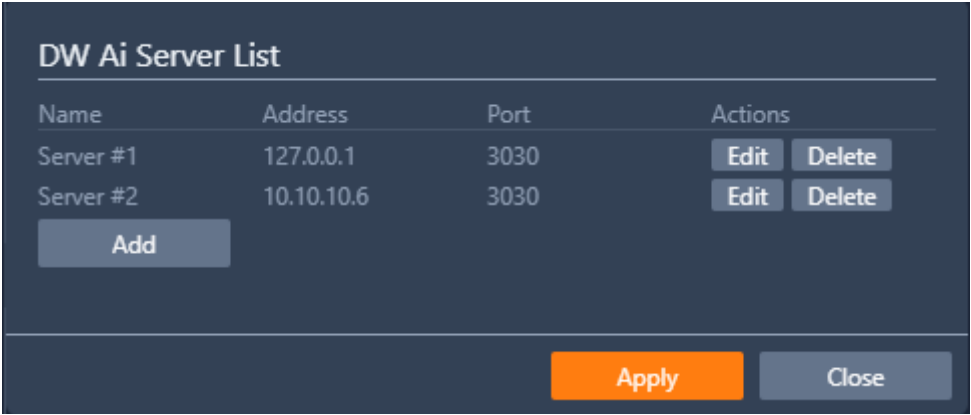
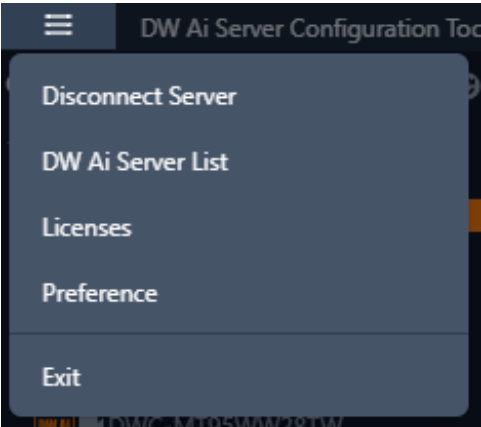
**STEP 2: DW Ai Server List**

If multiple DW Ai Servers will be used, the additional DW Ai Server will need to be added.

**NOTE:** You can define up to four (4) DW Ai Servers at a time.

To add an additional DW Ai Server:

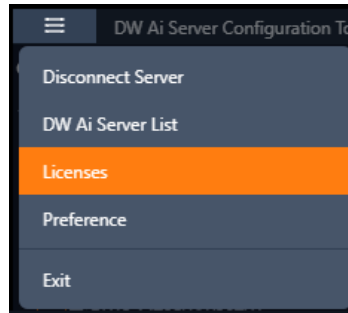
- 1. Open the DW Ai Server Configuration Tool and log in as the admin.
- 2. Click on the menu icon in the top left, then select DW Ai Server List.
- 3. Click Add.
- 4. Enter the IP address of the DW Ai Server.
- 5. Leave the port set to 3030.
- 6. Click OK to return to the previous menu.
- 7. Click Apply to save your changes.
- 8. Click Close to close and return to the previous menu.



## STEP 3: DW Ai Server Licenses

To use the analytic features of a DW Ai Server, a license is required. Licenses can be managed through the DW Ai Server Configuration Tool program.

To view the licenses, select “Licenses” from the Main Menu in the DW Ai Server Configuration Tool.



### Active Licenses

The Active Licenses list shows all licenses of the DW Ai Server and how the licenses are currently allocated.

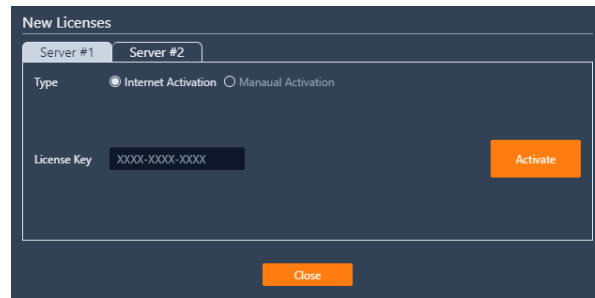
Server	Name	Used Channels	Total Channels	License Key
Server #1	DW AI Server 4ch Enterprise	4	4	
Server #1	DW AI Server 10ch Enterprise	9	10	
Server #1	DW AI Server 10ch Enterprise	0	10	

### New Licenses

The New Licenses area of the menu, server tabs (Server #) are created for each DW Ai Server. Select a server tab to view the license activation interface.

- **Type** Specifies the activation method that will be used for your license activation request.
  - **Internet Activation:** Select to enter the license activation key to add additional DW Ai licenses.
    - **License Key:** Enter the alphanumeric DW Ai license key then click “Activate” to add a license. An Internet connection is needed for the DW Ai Server to use this feature.
  - **Manual Activation:** Select to copy the server’s HW GUID and manually add a DW Ai license. This option is intended for use if the DW Ai Server does not have access to the Internet.
    - **HWGUID:** This is the unique code for the system. Copy the HWGUID and submit request for a manual activation code to licenses@digital-watchdog.com. The email should include the server’s HWGUID and the license key that you are trying to activate.
    - **Copy to clipboard:** Copies the HWGUID to the clipboard.
    - **License Key:** Type or paste the activation code into the space provided then click “Activate”.

- **Activate:** Click this button to validate the entered Code. The license will then be applied to the selected DW Ai Server.
- **Close:** Click this button to close the Licenses page and return to the previous screen.



#### STEP 4: Enable Tab – DW Ai Server Plugin

To set up analytics on the DW Ai Server, select a camera from the left-side panel. The Enable tab shows the status of the plug-in for the selected camera. From here you can check license status and select the preferred deep-learning feature.

- **DW Ai Server Plugin:** Toggle to enable/disable the plug-in for the selected camera.
- **Tracker Engine:** Defines the tracking engine that will be used for analytics. The tracker engine will need to ‘learn the scene’ to determine background from moving foreground objects. While initially learning the scene, a message will be displayed in the live view, and no objects will be tracked during this time.
  - **DL Object Tracker:** When selected, the analytic engine will use the GPU to detect, categorize and track objects as they move through the camera’s detection areas.
    - When set to use Object Tracker, the objects can be classified using either deep learning models or by using properties extracted from an object in a calibrated scene. If the Deep Learning Filter is not used, camera calibration is required to detect the object class.
  - **DL People Tracker:** When selected, the tracker uses the GPU to detect and track people as they move through the camera’s detection areas.
- **Apply:** Apply changes to the selected camera.

The calibration and classification features are not displayed when using the Deep Learning filter, DL Object Tracker, or DL People Tracker. When first selected, the DL trackers will run a model generation process. This optimizes the DL models to run on the available GPU hardware.

Regardless of which tracker is selected, the DL People tracker model, DL Object Tracker model and the DL Filter model will all be optimized together. This process can take up to 10 minutes per model and may increase with different GPU configurations. The process will not need to be run again unless the GPU hardware is changed. While optimization is performed a message will be displayed in the live view, and no objects will be tracked during this time.

