Blackjack®*Ai*™

Servers Powered by DW Spectrum and IVA Ai Server

DW-BJAiT64TR	DW-BJAiT80TR	DW-BJAiT96TR

Default Login Information for DW Spectrum® IPVMS		Default login information for the server's OS	
Username: **admin**	Password: **admin12345**	Username: **dwuser**	Password: **Dw5pectrum**

WHAT'S IN THE BOX								
Blackjack Tower™ Ai server		1	Keyboard and mouse		1 set	Mini-DP to True HD Adapter		1
Quick start guide		1	Power Cable		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.
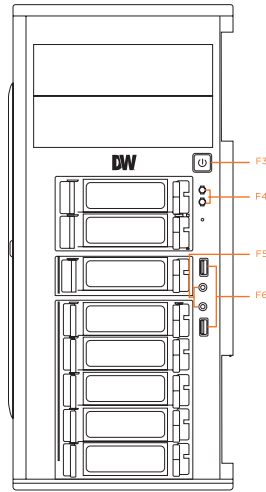
Attention: This document is intended to serve as a quick reference for initial setup.
See the DW Spectrum® full manual for more information on features and functionality.

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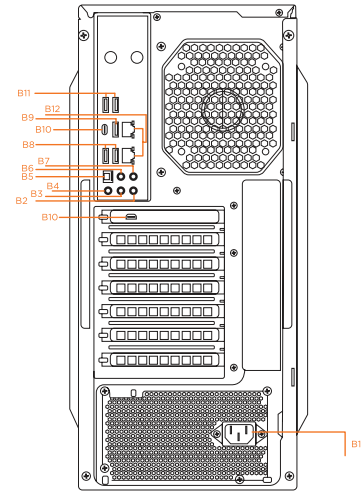## HARDWARE OVERVIEW
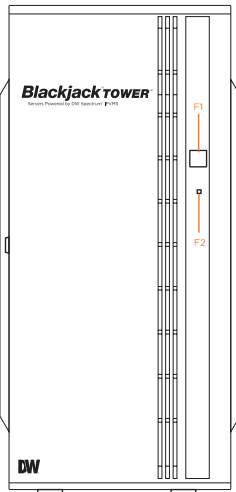
Front Panel

F1	Power button
F2	Power LED
F3	Internal power button
F4	Drive status LED
F5	Audio input and output
F7	2x USB 2.0 ports

Back Panel

B1	Power - SMPS
B2	Line in
B3	Line out
B4	Mic in
B5	SPDIF out
B6	Surround out
B7	Center/LFE out
B8	USB Type C port

B9	USB 3.0 ports
B10	1x Mini DisplayPort
B11	1x USB port
B12	2x network ports

Default Login Information for DW Spectrum® IPVMS

Username: **admin**	Password: **admin12345**

Default login information for the server's OS

Username: **dwuser**	Password: **Dw5pectrum**

SPECIFICATIONS

PART NUMBER		DW-BJAiTxxTR
Included DW Spectrum IP licenses		4 (DW-SPECTRUMLSC004)
Included DW Ai Server Licenses		4 channel(DW-DWAiSLSC004)
Form factor		Full-size Tower
Operating system	Windows® 10	DW-BJAiTxxTR
	OS on SSD	480GB SSD
CPU		12th Gen Intel® Core™ i7 processor
Memory		32GB
Ethernet port		2x gigabit ethernet ports (RJ45)
System	Max video storage rate (Mbps)	320 Mbps
	Max # of analytic streams (secondary)	Up to 64
	Maximum HDD	6 x 3.5 SATA HDD, Hot-Swappable
	Storage Options	120TB RAID5
	RAID	RAID5
	USB interface	Yes
Video-out	Outputs	1x Display Port, for system configuration
	Graphics Card	NVIDIA RTX A2000 12GB
Pre-loaded VMS software		DW Spectrum® IPVMS
DW Spectrum Client supported OS		Cross-platform - Windows®, Linux Ubuntu® and Mac®
Preloaded Analytic software		DW Ai Server
Ai Configuration Tool supported OS		Cross-platform - Windows® and Linux Ubuntu®
Mobile apps		iOS® and Android®
Keyboard and mouse		Included
Power supply		500W**
Operating temperature (room)		41°F-104°F (5°C-40°C)
Operating humidity		20-90% RH
Dimension (WxDxH)		8.6" x 19.12" x 16.83" (218.6 x 485.8 x 427.5 mm)
Other certification		NDAA, TAA
Warranty		5 year limited

* For 10TB HDD – RAID5 Configuration reduces raw storage size by the equivalent of one (1) HDD size

* For 10TB HDD – RAID6 Configuration reduces raw storage size by the equivalent of two (2) HDD size
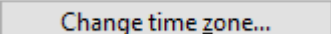
** UPS recommended

SETTING UP THE SERVER

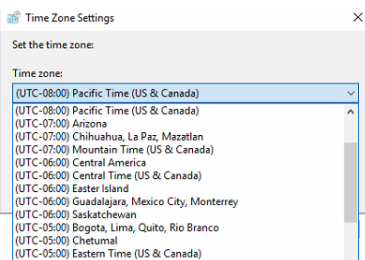**STEP 1:**   **Connect external devices, power and network.**

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.

2. Connect the server to an appropriate power source. It is recommended to use a UPS system.

    * 3000VA or higher is recommended.

3. Power up the server if the server does not turn on automatically by pressing the power button on the front of the server. (F1 on the diagram).

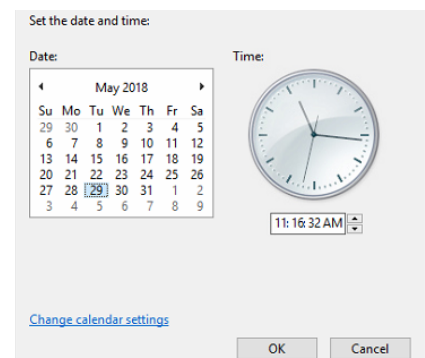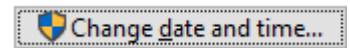   * Connecting the power cable to the live power source may turn on the server automatically.

PoE Switch for cameras
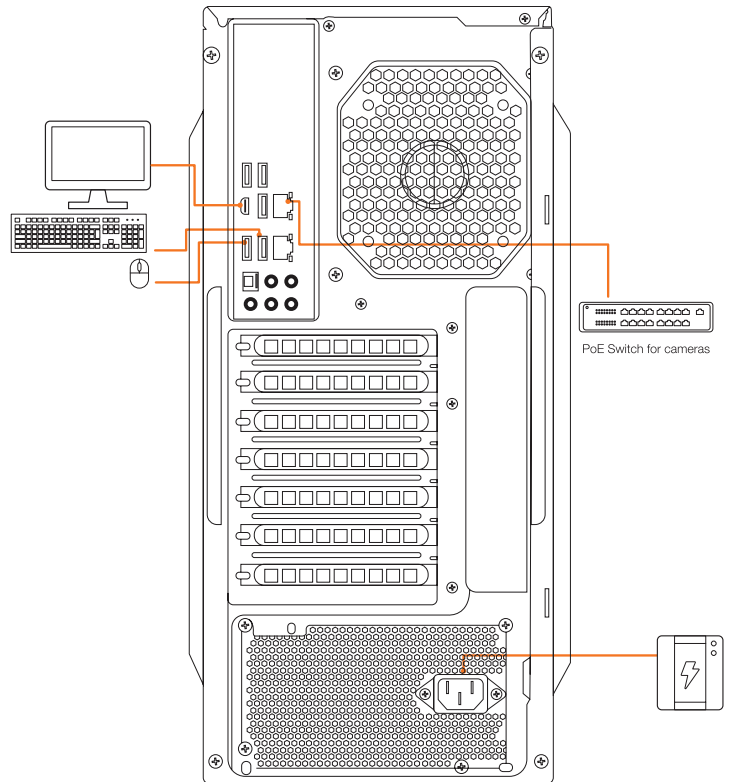
STEP 2:   **Configure date and time**

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

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

Time Zone Settings ✕

Set the time zone:

Time zone:

(UTC-08:00) Pacific Time (US & Canada)

(UTC-08:00) Pacific Time (US & Canada)
(UTC-07:00) Arizona
(UTC-07:00) Chihuahua, La Paz, Mazatlan
(UTC-07:00) Mountain Time (US & Canada)
(UTC-06:00) Central America
(UTC-06:00) Central Time (US & Canada)
(UTC-06:00) Easter Island
(UTC-06:00) Guadalajara, Mexico City, Monterrey
(UTC-06:00) Saskatchewan
(UTC-05:00) Bogota, Lima, Quito, Rio Branco
(UTC-05:00) Chetumal
(UTC-05:00) Eastern Time (US & Canada)

Press OK after selecting the correct time zone.

3. Click "Change date and time..." to update the date and time if they are not correct.   Change date and time...
   * Verify the time zone before updating the date and time. Time may show 2 or 3 hours off due to incorrect time zone.
   Press OK after adjusting to the correct date and/or time.

4. Press OK to close the date and time when done.

Set the date and time:

Date: Time:

◄   May 2018   ►

Su Mo Tu We Th Fr Sa
29   30   1   2   3   4   5
6   7   8   9   10   11   12
13   14   15   16   17   18   19
20   21   22   23   24   25   26
27   28   29   30   31   1   2
3   4   5   6   7   8   9

11: 16: 32 AM

Change calendar settings

OK   Cancel

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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	

* 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.

1. Double click on "Network Connections" on the desktop.

2. Right click on the Ethernet with cable connected and click "Properties".
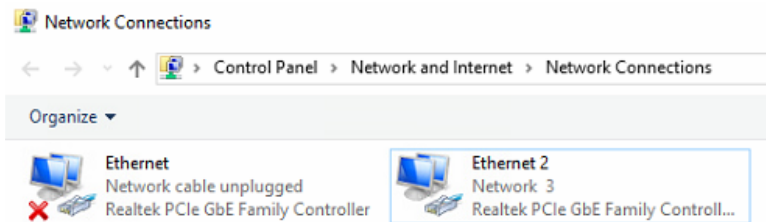
3. Select "Internet Protocol Version 4 (TCP/IPv4)" and click "Properties".
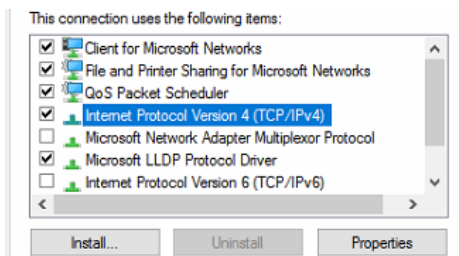
4. Select "Use the following IP address" (Use the following DNS server addresses will be selected automatically).

5. Enter IP address and Subnet mask of the camera network. (Do not enter anything for the default gateway, preferred DNS server and alternate DNS server.
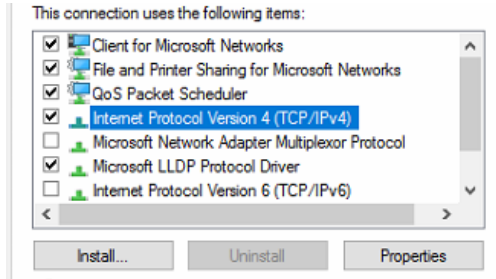
> **NOTE** It must be the same network as the cameras and must not be the same network as the local network. Contact your network administrator for more information.

6. Click OK to close then click close to go back to network connections.


4
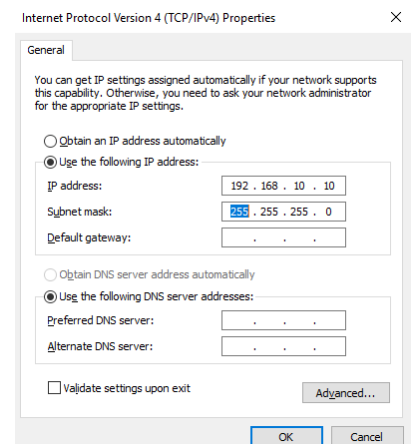
 Local Network

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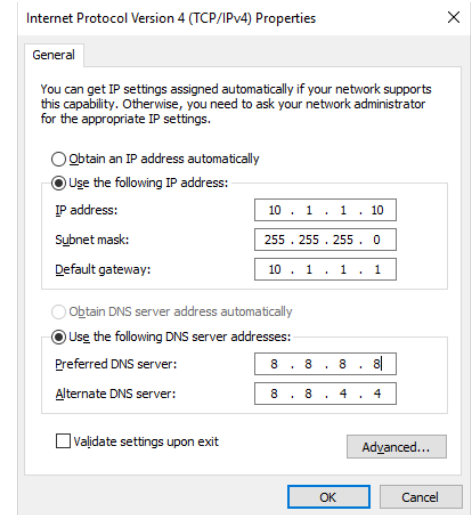
8.   Select "Internet Protocol Version 4 (TCP/IPv4)" and click "Properties".

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 B7 on the diagram (page 2) to the switch on the local network.

13.   Close the network connections dialog.
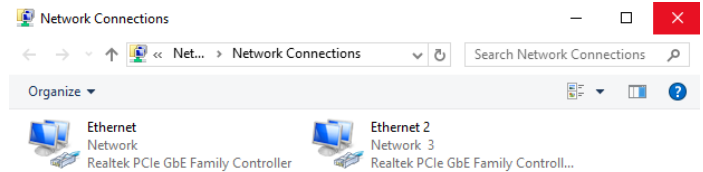
SETTING UP DW SPECTRUM® MEDIA SERVER

Login: **admin**
Password: **admin12345**

**STEP 1:**   **Initial run from the Blackjack® server**

1.   Open the DW Spectrum® client by double click on the DW Spectrum® icon.

2.   Click on the pre-configured server.

3.   Enter the password and click connect.
     * Default password: admin12345 (case sensitive).
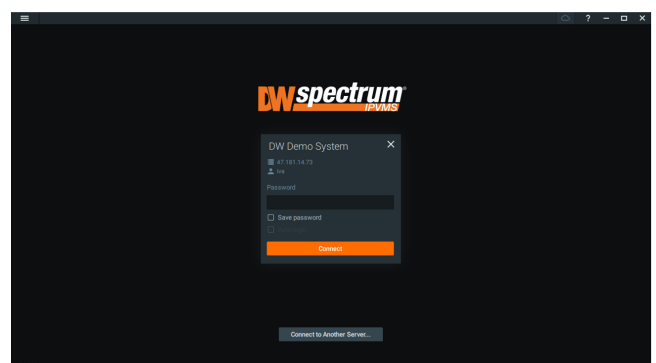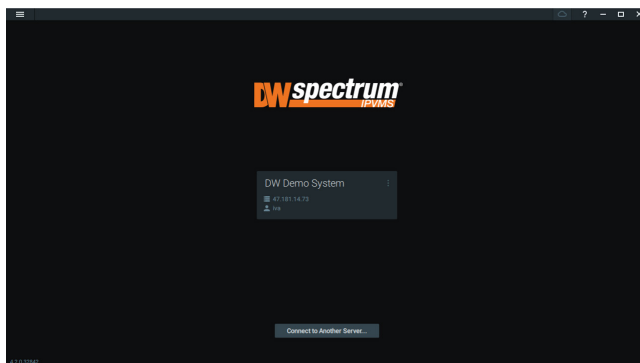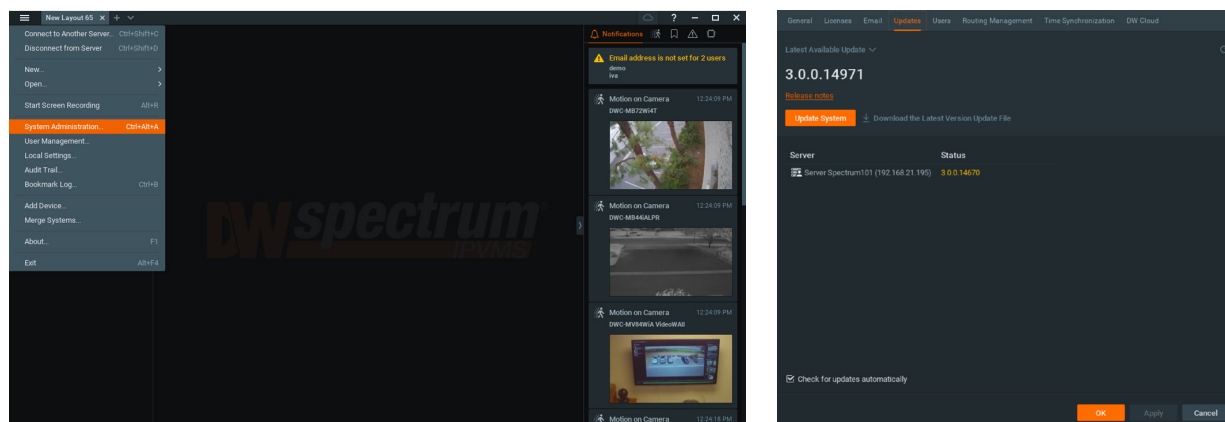
STEP 2:   To rename the server

1.   Right-click on the server name listed on the resources then click server settings.

2.   Go to the general tab and enter the new server name in the name field. Click OK.
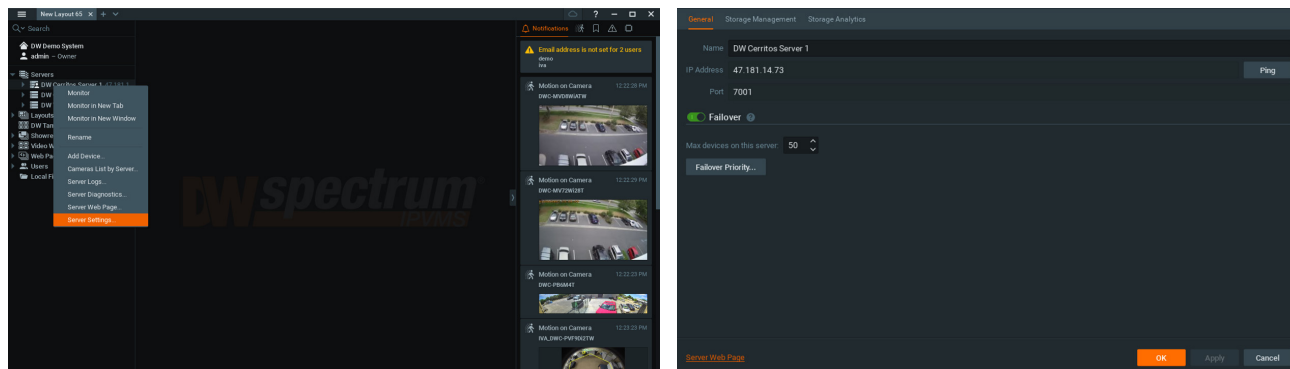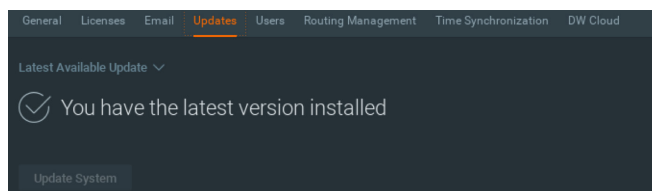

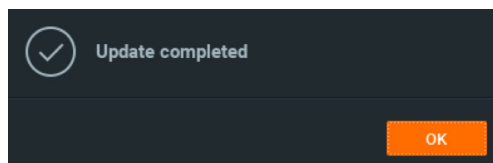## STEP 3:   To check for updates

1.   Click on the menu   then click "System Administration".

2.   Go to the updates tab. If the system requires updating, click on the update system button.

* If you are on the latest version, it will say "You have the latest version installed" and the Update System button will be disabled.
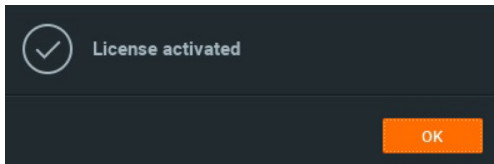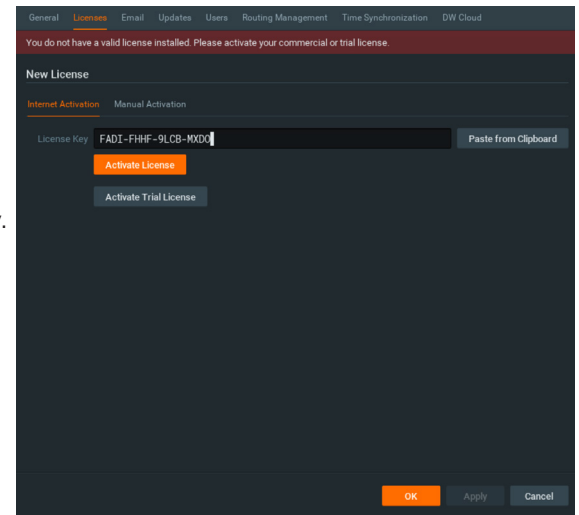

3.   Click OK when the update is completed.
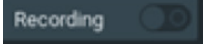
STEP 4: **Enter and activate licenses**

1. Go to the system administration window and click on the license tab.

2. Enter the license key and click "Activate License". An Internet connection is required.
       * Click on "Activate Trial License" if you have not purchased a valid license key.

3. Click OK to when the license key is activated.

STEP 5: **Configure recording**
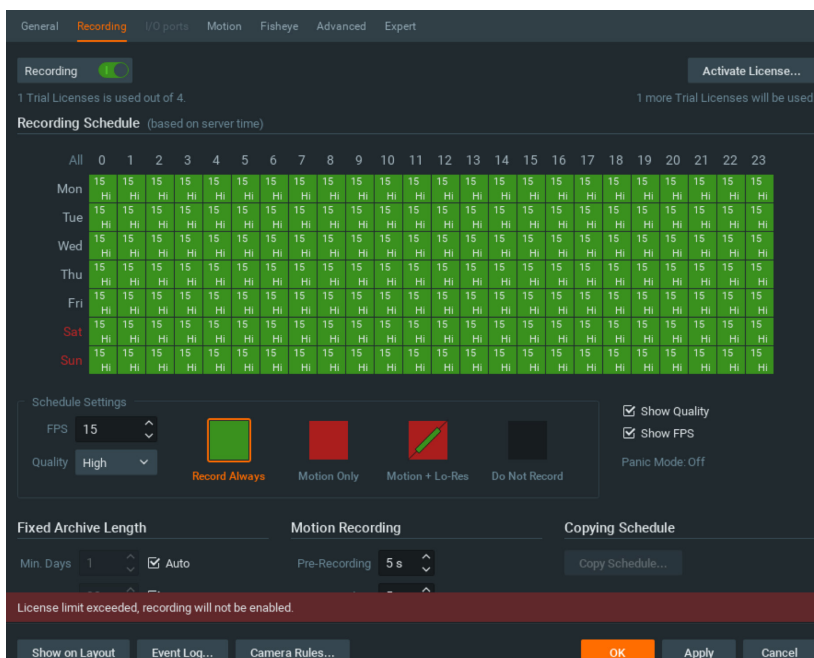
1. Right-click on a camera in the resource tree to setup recording. Click on camera settings from the context menu.
2. Go to the recordings tab.
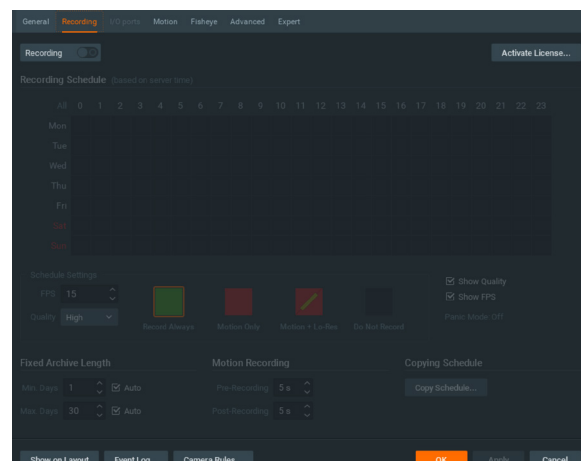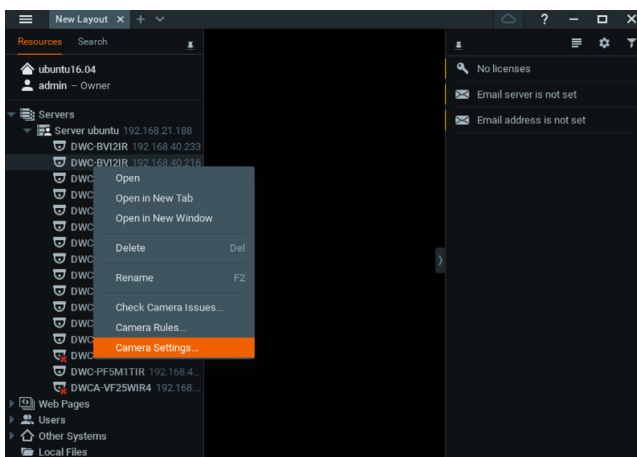
3. Click **Recording** to turn on recording.

4. Configure the camera's schedule settings for quality, FPS and recording type.

5. Click and drag the mouse over the recording schedule to apply the settings to multiple days and times.
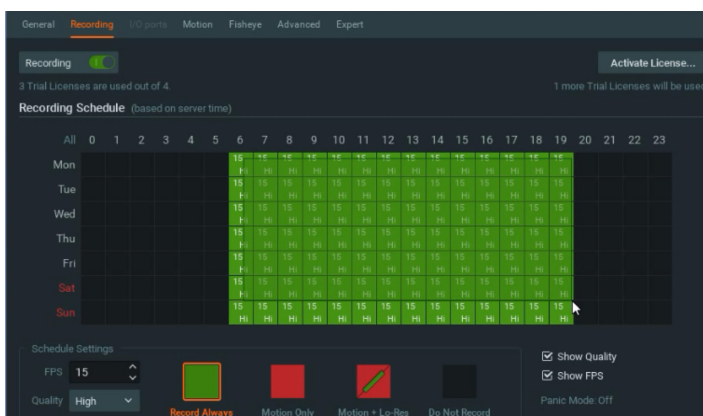
* Click "All" to apply the recording settings to the entire schedule.
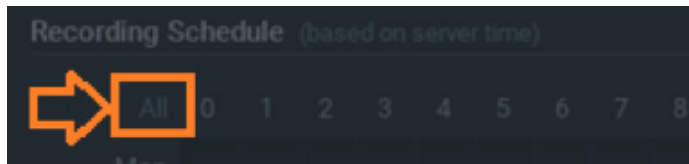
6.   A red dot will appear next to the camera in the resource tree once recording is started.

STEP 6: **Backup database**
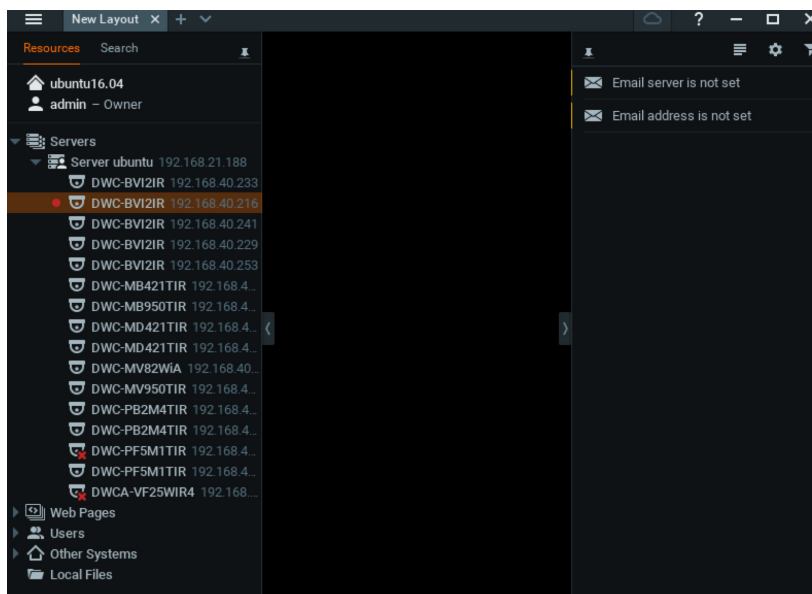
1. Go to the system administration window and click on the general tab.

2. Click "Create Backup…".

3. Navigate to the folder you want to save the database and enter a name for the backup file. Click save.
* It is strongly recommend to backup your data to an external storage media as well.
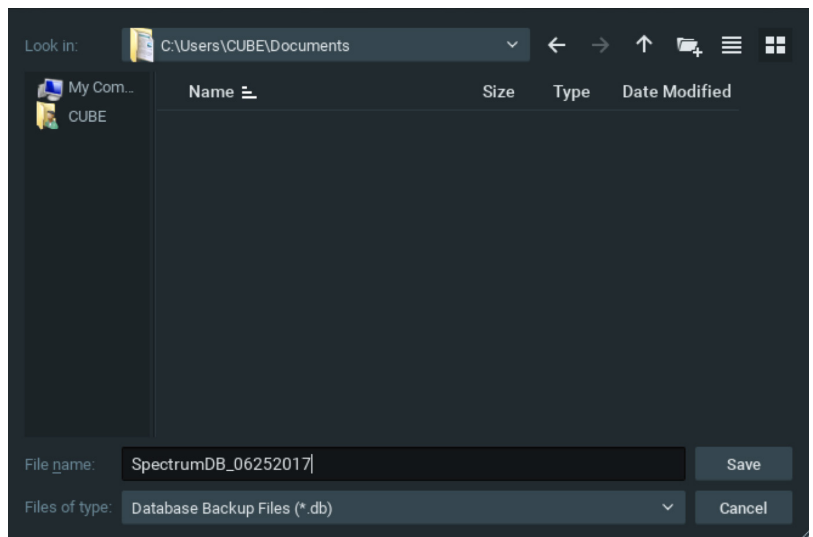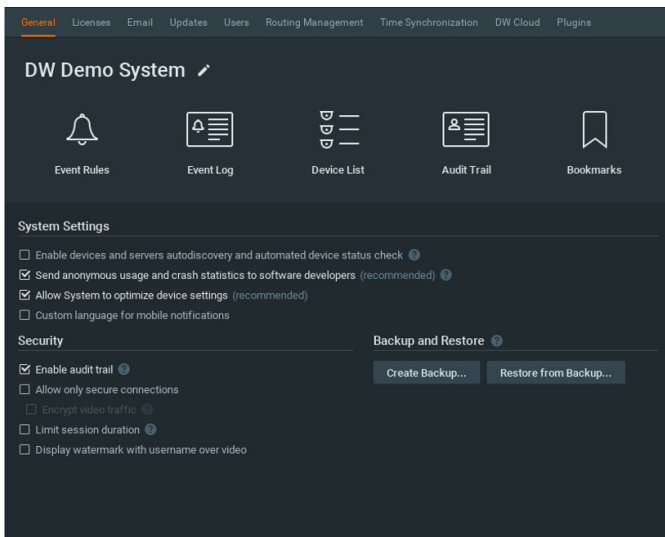
NOTE: More information and instructions are available in the DW Spectrum IPVMS user manual.

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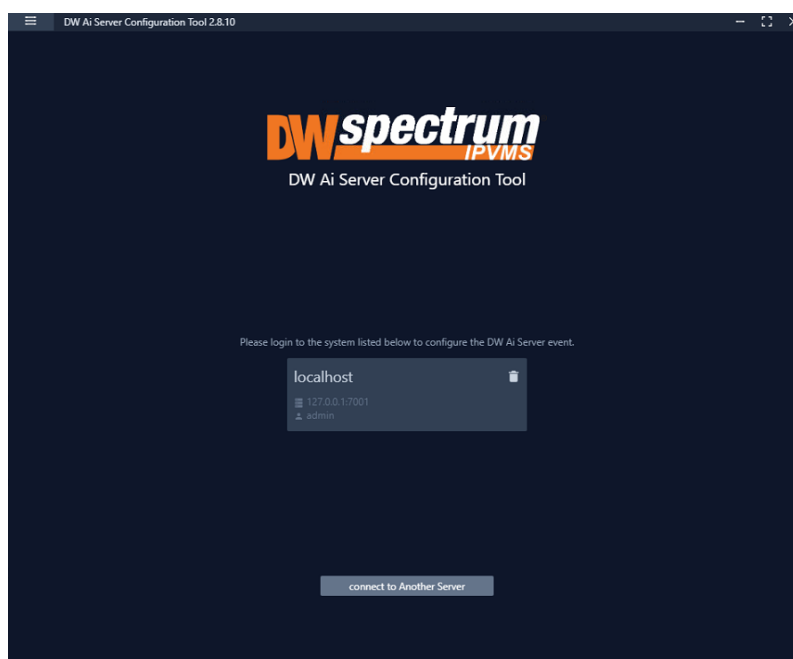
2) Once you are logged in and connected to the DW Ai Server through the DW Ai Server Configuration Tool, a list will show all added cameras in the left-side panel.

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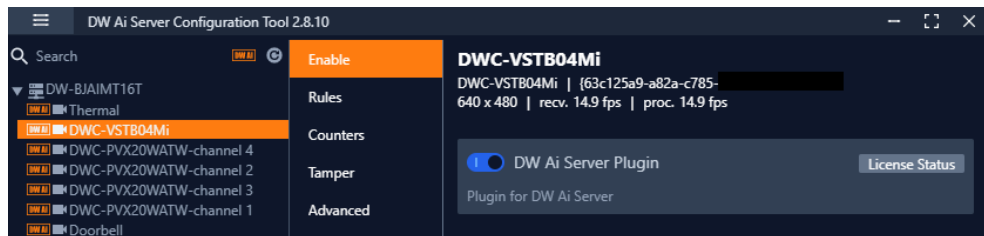

Once enabled, you will find the following features in the left-side panel:

•   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.
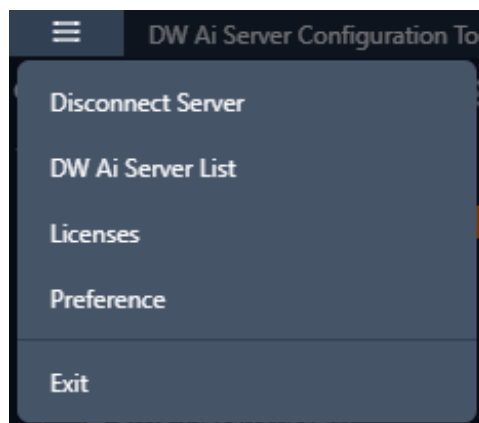
STEP 2:   DW Ai Server List

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.
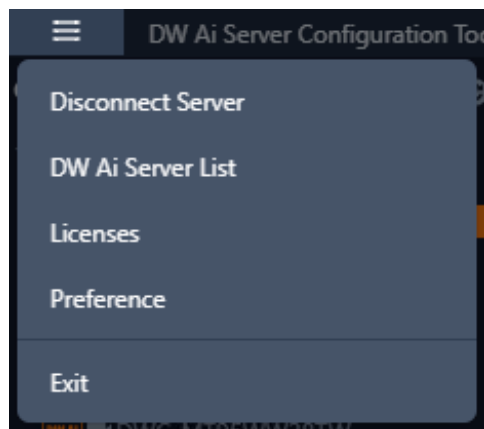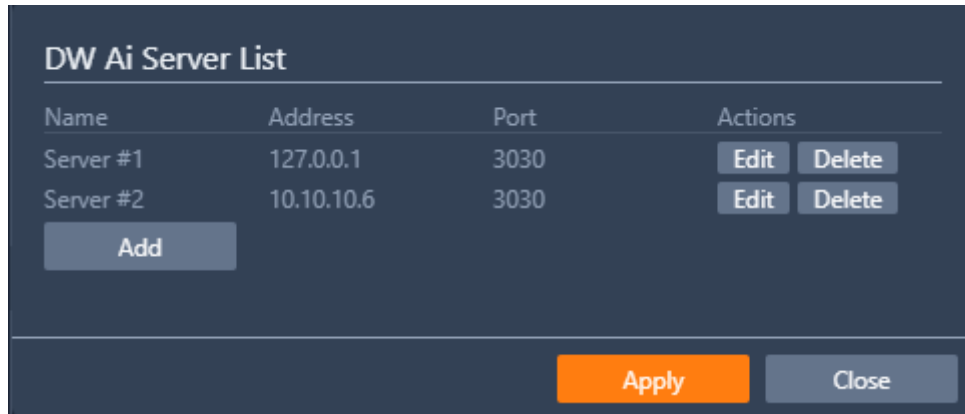
STEP 3: **DW Ai Server Licenses**

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

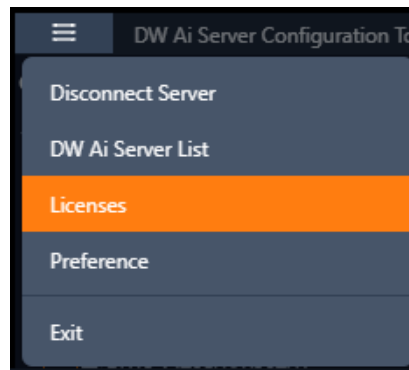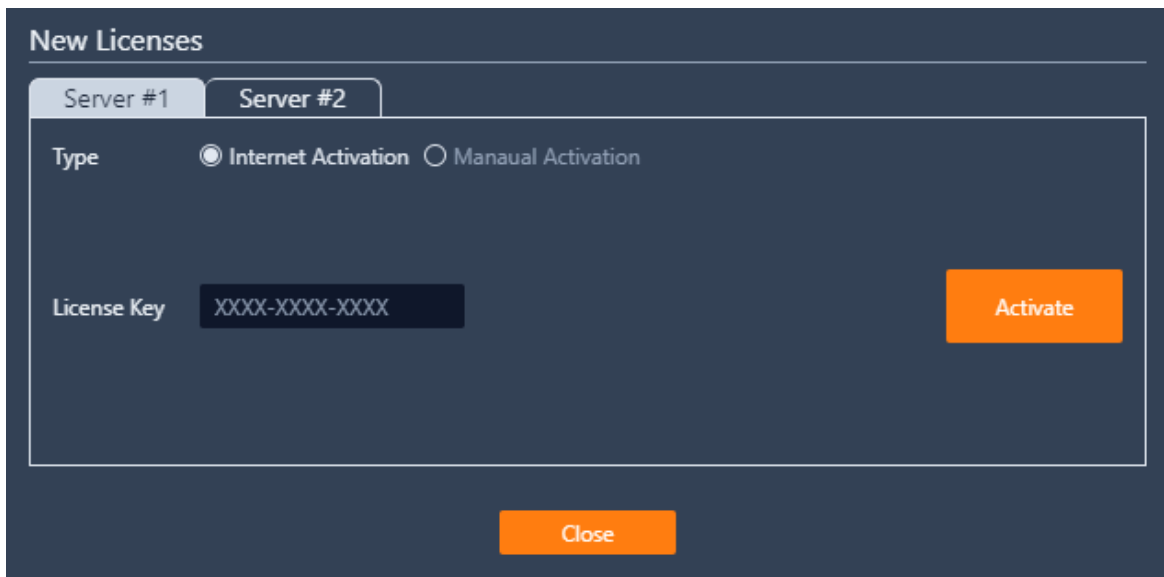The Active Licenses list shows all licenses of the DW Ai Server and how the licenses are currently allocated.

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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.

  o **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.

  o **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.

> o **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.

> o **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.
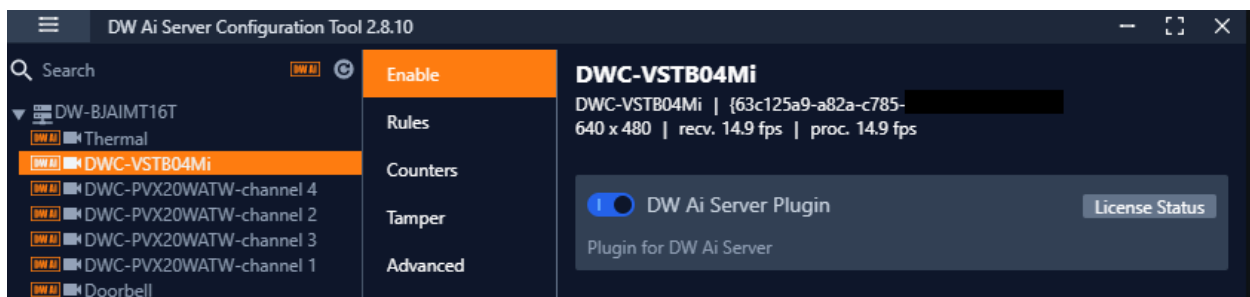
NOTE: This products is covered by one or more claims of the HEVC Patents listed at patentlist.accessadvance.com.

TROUBLESHOOTING TIPS

Problem	Possible solutions
My camera does not auto-discover	1. Is the camera in the same LAN network as the media server? 2. Is your camera compatible with DW Spectrum®? (Refer to our website for full list of supported cameras.) 3. Is the camera updated to its latest firmware? 4. If your camera is integrated with DW Spectrum® via ONVIF, make sure ONVIF is enabled on your camera. 5. Try adding the camera manually. 6. Try rebooting the server after installation. Allow up to 2 minutes for the server to map your network and detect all supported devices.
Videos are slow	1. Are you accessing the same cameras from multiple clients? (LAN and WAN) 2. Do you have a Gigabit network? Check your network speed.
My camera appears disconnected	1. Under camera settings, make sure the user name and password are correct. 2. Under the camera settings, use the 'Ping' button to make sure the camera is connected to the network properly. 3. If you can connect to the camera's web viewer, try rebooting the camera and/or restore it to factory default. 4. Make sure your camera is using the latest firmware available. 5. Make sure that the camera is connected to the same network as the server. 6. If you are connecting to a camera that is integrated with DW Spectrum® via the ONVIF protocol (see list), make sure ONVIF is enabled. 7. Make sure your user has permissions to view that specific camera.
I cannot get playback video from my camera	1. Do you have network connection between client and server (in case server and client are not on the same machine)? 2. Make sure your user has playback viewing permissions for the selected channel. 3. Make sure the camera is set to a recording mode that would provide recorded video for the selected time and environment. 4. On the server side, check the media server log to make sure the camera you are trying to watch has not been unexpectedly disconnected.
I get an 'unauthorized' message on my camera	1. Make sure the camera's user name and password are properly entered in the camera's general information under the camera settings menu. 2. If necessary, try rebooting the camera to apply the camera's user name and password.

DW SPECTRUM SYSTEM REQUIREMENTS

Recommended specs for the full client

	Single-monitor DW Spectrum workstation	Dual-monitor DW Spectrum workstation	Quad-monitor DW Spectrum workstation
Processor	Intel i5 8th gen or AMD Ryzen 5 3000 Quad-Core or better	Intel i7 8th gen or AMD Ryzen 7 3000 Quad-Core or better	Intel i9 or AMD Ryzen 9 Quad-Core or better
Video card	Intel HD Graphics onboard GPU or better	Intel HD Graphics onboard GPU or better	GeForce GTX 1650 or better
RAM	8 GB DDR3 1600 MHz or better	16 GB DDR3 1600 MHz or better	32 GB or better
NIC	1Gbps or better	2 x 1 Gbit or better	2 x 1 Gbit or better
Storage	Dedicated SSD or NVME disk for the OS, 128 GB or larger	Dedicated SSD or NVME disk for the OS, 128 GB or larger	Dedicated SSD or NVME disk for the OS, 128 GB or larger
OS supported	**Microsoft Windows OS** (supported by both DW Spectrum® Server and Client). • Windows 10 – Released: July 2015 • Windows Server 2012 – Released: August 2012 | EoS: 10/2023 • Windows Server 2012 R2 – Released: October 2013 | EoS: 10/2023 • Windows Server 2016 – Released: October 2016 | EoS: 01/2027 • Windows Server 2019 – Released: October 2018 | EoS: 01/2029 • Windows Server 2022 – Released: August 2021 | EoS: 10/2031 **NOTE: DW Spectrum IPVMS for Windows can be installed as a software bundle or the Server and Client software can be installed separately. **Ubuntu (Debian-based Linux) OS** (supported by both DW Spectrum Server and Client). • Ubuntu 18.04 LTS "Bionic Beaver" – Released: April 2018 | EoS: 04/2028 • Ubuntu 20.04 LTS: "Focal Fossa" – Released: April 2020 | EoS: 04/2030 **NOTE: DW Spectrum IPVMS for Ubuntu is only available for separate installations (not bundled). **Macintosh OS** (supported only by the DW Spectrum Client. DW Spectrum Server is not available for macOS). • macOS 11.0, 11.1, 11.2 "Big Sur" – Released: November 2020 • macOS 12 "Monterey" – Released: October 2021 **NOTE: DW Spectrum IPVMS for macOS is only supported by the DW Spectrum Client.		

* Except Storage Server version
  Important: OS not listed will be not be supported by DW®
Tech Support

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