



Avocent[®] ADX IPSL IP Serial Device

Installer/User Guide

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Technical Support Site

If you encounter any installation or operational issues with your product, check the pertinent section of this manual to see if the issue can be resolved by following outlined procedures.

Visit <https://www.vertiv.com/en-us/support/> for additional assistance.

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1 Getting Started

1.1 Product Overview

In today's market, as the footprint of compute, network and storage devices continues to increase, there is a growing need for remote access to IT devices in the edge market. The Vertiv™ Avocent® ADX IPSL IP serial device provides an innovative serial IP solution for simplifying remote access and troubleshooting IT devices while seamlessly scaling from edge to enterprise.

Figure 1.1 Avocent ADX IPSL IP Serial Device Descriptions

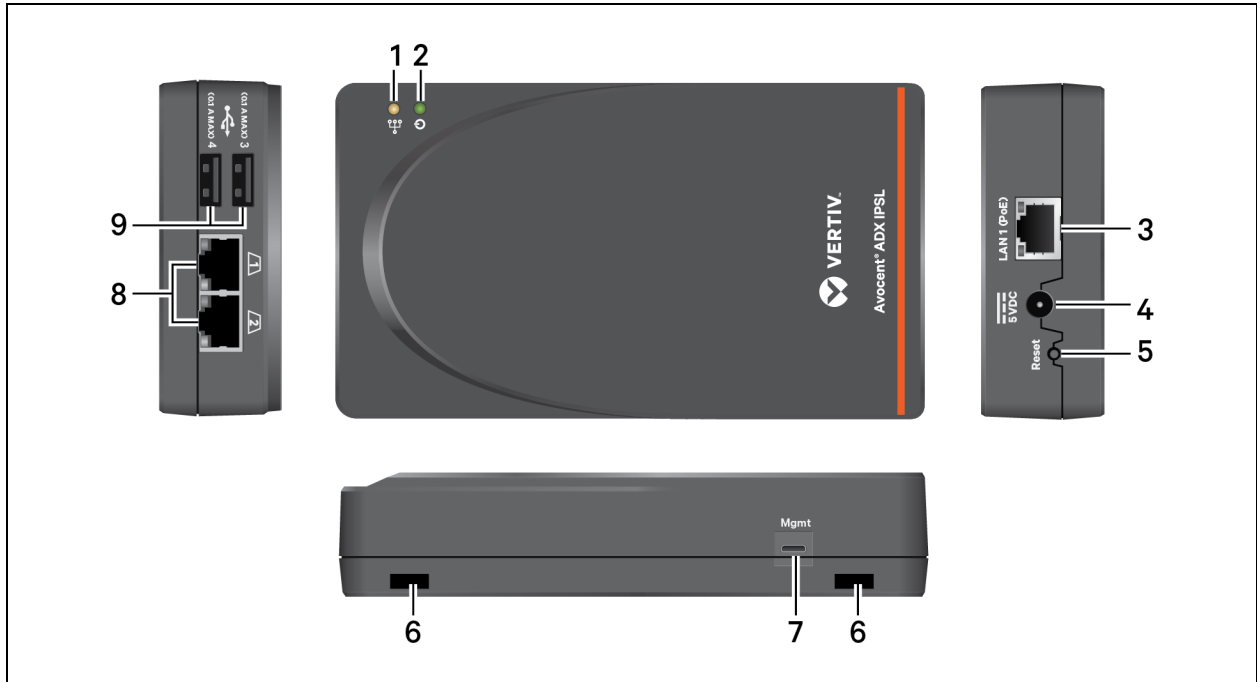



Table 1.1 Avocent ADX IPSL IP Serial Device Descriptions

Item	Description	Item	Description
1	Activity indicator.	6	Holes to secure the device.
2	Power indicator.	7	Mgmt port for Micro USB.
3	LAN1 (PoE+) port.	8	RJ45 ports.
4	Power input.	9	USB Type A ports.
5	Reset button.		

The Avocent ADX IPSL IP serial device has LED indicators for both power and activity. The [Table 1.2 on the next page](#) defines the indicators.

Table 1.2 LED Indicator Descriptions

Indicator	Description
Power	
Blinking red	The Avocent ADX IPSL IP serial device is booting up.
Solid red	Fully booted and is now accessible.
Activity	
Off	No activity detected.
Solid green	Any session type is active.
Blinking blue	Locator function has been activated, either locally or remote.
 CAUTION: During a firmware update or when the Avocent ADX IPSL IP serial device is being reset to factory defaults, both the power and activity LED's blink red. During this time, you must not remove the Avocent ADX IPSL IP serial device, otherwise you may corrupt the firmware.	

The Avocent ADX IPSL IP serial device also has a Reset button that enables you to reset the device or activate the device's locator function. Choose from the below options to utilize this buttons:

- To use locator mode, press, and hold the Reset button for less than two seconds to activate it. Then, press and hold again for less than two seconds to turn off that mode.
- To reboot the device, press, and hold the Reset button for two to eight seconds.
- To reset the device to factory default settings, press, and hold the reset button for more than eight seconds. This erases all settings and configuration information on the IP serial device.

For more information about RJ-45 pin out of Avocent ADX IPSL IP serial device, see [Table 1.3 below](#).

Table 1.3 RJ-45 Pin Out

RJ45 Pin	Avocent	Cisco
1	RTS.	CTS.
2	DTR.	DCD/DSR.
3	TXD.	RXD.
4	GND.	GND.
5	CTS.	NC.
6	RXD.	TXD.
7	DCD/DSR.	DTR.
8	NC.	RTS.

1.2 Features and Benefits

The Avocent ADX IPSL IP serial device provides the below benefits for your data center:

- Provides secure remote serial access to IT devices to quickly troubleshoot problems without being physically present.
- Manage up to 4 serial devices simultaneously.
- Leverages Power over Ethernet (PoE) to reduce power costs and simplify cabling.
- Works as a standalone serial device or as part of an integrated Vertiv™ Avocent® ADX Platform.
- Centralizes and protects your expensive IT equipment on-site while permitting remote access.
- Uses LED lights to quickly identify the location of your Avocent ADX IPSL IP serial device.
- Remote update firmware of your IT devices.

1.3 Installation and Initial Setup

For installation and initial setup instructions, see the Avocent ADX IPSL IP Serial Device Quick Installation Guide provided with your Avocent ADX IPSL IP serial device. For any additional product documentation or product-related links, visit the product page at www.vertiv.com/ADX-IPSL and select the *Documents* and *Downloads* tab.

1.3.1 Assigning an IP address

The Avocent ADX IPSL IP serial device uses the IP addresses to uniquely identify itself to IP-based target devices. It supports both Dynamic Host Configuration Protocol (DHCP) and static IP addresses.

NOTE: By default, a DHCP server on the network assigns an IP address to the Avocent ADX IPSL IP serial device.

Get the assigned IP address from the DHCP server and enter it into <https://<IPAddr>> to connect to its web UI.

If the assigned IP address is unknown, follow one of these two steps:

NOTE: The computer you are connecting must have a minimum of Windows 10 installed or have the Bonjour protocol installed (by default on Mac-OS computers).

1. Connect another computer to the same local network to which the Avocent ADX IPSL IP serial device is connected.
- or-
2. Connect a micro USB cable from the Avocent ADX IPSL IP serial device's micro USB port to another computer.

NOTE: Ensure that a new USB-NIC network interface was created automatically on the computer.

First time IP serial device setup

By default, a DHCP server on the network assigns an IP address to the IP serial device. To connect to the web User Interface (UI), enter the IP address from the DHCP server as <https://<IPAddr>> in a web browser.

If the assigned IP address is unknown, complete the following additional connection and configuration steps.

NOTE: Before connecting another computer, ensure it either has a minimum of Windows 10 installed or has the Bonjour protocol installed (default on Mac OS computers).

Establishing another connection

To establish an additional connection, either connect another computer to the same local network to which the IP serial device is connected, or connect a micro USB cable from the IP serial device micro USB port to another computer.

NOTE: Ensure that a new USB-NIC network interface was created automatically on the computer.

To view or configure the IP address of the Avocent ADX IPSL IP serial device:

1. From a web browser on your computer enter: <https://ipsl-<macaddr-LAN1>.local>, where macaddr-LAN1 is the MAC1 on the sticker of the Avocent ADX IPSL IP serial device. For example, <https://ipsl-12a4dc3255b0.local>.

NOTE: If the hostname is not found, you may use this predefined IP address instead: <https://169.254.0.10>.

2. Once the URL is entered into the browser, the Avocent ADX IPSL IP serial device's web UI appears.
3. Log in with the default username/password of admin/admin. You may be asked to change the password on first login.
4. From the web UI, navigate to *Configuration - Network - eth0* to find the assigned DHCP IP address or change any desired Network settings (for example, change to a static IP address).

NOTE: Avocent ADX IPSL IP serial device is automatically managed by a rack manager via its Managed mode.

5. To use the Avocent ADX IPSL IP serial device with a power supply, select *Configuration - Registration* in the web UI and select *Standalone radio button* under the Mode.

Finding the assigned IP address

1. From a web browser, enter: <https://ipsl-<macaddr-LAN1>.local>, where macaddr-LAN1 is the MAC on the sticker of the IP serial device. For example: <https://ipsl-12a4dc3255b0.local>.

NOTE: When using a USB connected to a laptop, if the hostname is not found, you may use this predefined IP address instead: <https://169.254.0.10>. the predefined IP address will not work if using a LAN connection.

2. Once the URL is entered into the browser, the Avocent ADX IPSL IP serial device web UI appears.
3. Log in with the default username/password of admin/admin. You may be asked to change the password on first login.
4. From the web UI, navigate to *Configuration-Network-eth0* to find the assigned DHCP IP address or change any desired Network settings (for example, change to a static IP address).

Changing the mode

5. By default, the IP serial device is managed by a rack manager (Managed mode). To use the IP serial device with a power supply, select *Configuration-Registration* in the web UI and select *Standalone* under the Mode heading.

2 Web User Interface (UI)

Once you have connected the Avocent ADX IPSL IP serial device to a network and configured its IP address, you can access the Avocent ADX IPSL IP serial device with its web UI. The web UI provides direct access to the Avocent ADX IPSL IP serial device.

The web UI is compatible with the latest 32-bit and 64-bit versions of the below web browsers:

- Google Chrome.
- Microsoft Edge.
- Apple Safari.
- Mozilla Firefox.

To login the web UI:

1. Open a web browser to the address of the Avocent ADX IPSL IP serial device.
2. At the login screen, enter your *username* and *password*.
3. Once you login, the dashboard screen appears.

To use the Avocent ADX IPSL IP serial device without a rack manager:

NOTE: Avocent ADX IPSL IP serial device is automatically managed by a rack manager via its Managed mode.

1. From the sidebar of the web UI, select *Configuration - Registration*.
2. Under *Mode*, select the *Standalone radio button*.
3. Click *Apply*.

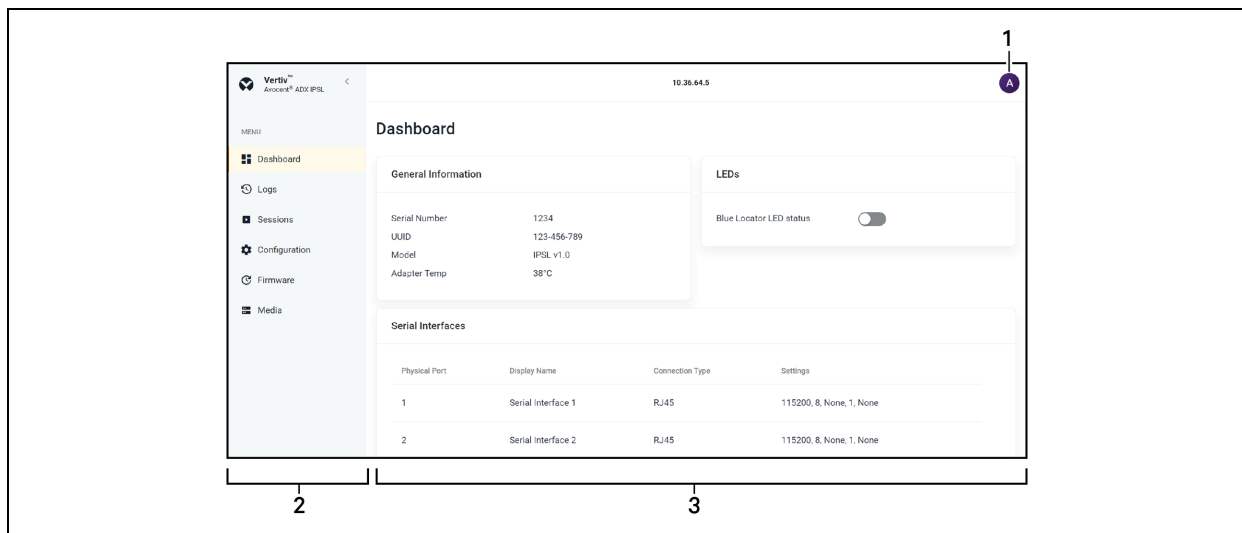


Table 2.1 Web UI Overview Descriptions

Item	Description
1	User preferences.
2	Sidebar.
3	Content area.

2.1 Target Management

The Avocent ADX IPSL IP serial device provides flexible, centralized control of data center servers and virtual media of remote branch offices where trained operators may be unavailable. Target management gives you flexible target device management control and secure remote access from anywhere at anytime.

The target management functionality of the appliance provides enterprise customers with the below features and options:

- HTML5 serial viewer.
- Virtual media.
- Configure serial communication.
- Parameters.
- Data logging.
- Manage up to 4 serial devices.
- Serial over SSH.

2.1.1 HTML5 session

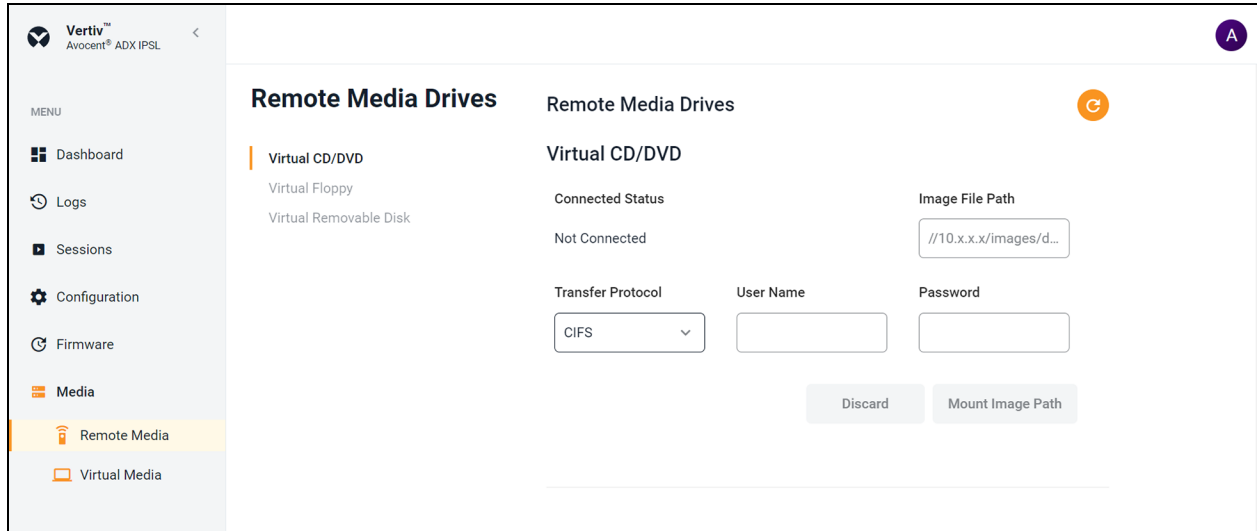
The web-based HTML5 Serial Viewer is compatible with the latest versions of the following browsers:

- Google Chrome.
- Microsoft Edge.
- Apple Safari.
- Mozilla Firefox.

To launch an HTML5 session, you must have assigned rights or belong to a user group with assigned rights.

2.1.2 Remote media

Figure 2.1 Remote Media Overview



To configure a remote server location:

1. Click *Remote Media* to open its properties sidebar.
2. Select the type of file to map. Select *Virtual CD/DVD* to map an .iso file or select either *Virtual Floppy* or *Virtual Removable Disk* to map an .img file.
3. Copy the file path for the .iso file that is located on the CIFS server and paste it in the image file path field.
4. Use the drop-down menu to select Transfer Protocol either *CIFS* or *NFS server*.

NOTE: A Transfer Protocol is a CIFS server by default.

5. Enter the credentials (User Name and Password).
6. Click on *Mount Image Path*.

NOTE: Once the physical drive or image is mapped, it can be used on the remote target device.

2.1.3 Virtual media

Use the virtual media feature on the client workstation to map an .iso or .img file on the client machine as a virtual drive on a target device.

Requirements

The virtual media feature has the below requirements:

- The target device must be able to use the types of USB2 compatible media that you virtually map.
- If the target device does not support a portable USB memory device, you cannot map it on a client machine as a virtual media drive on the target device.
- The user (or user group to which the user belongs) must have permission to establish virtual media sessions and/or reserved virtual medial sessions to the target device.
- Only one virtual media session can be active on a target device at one time.

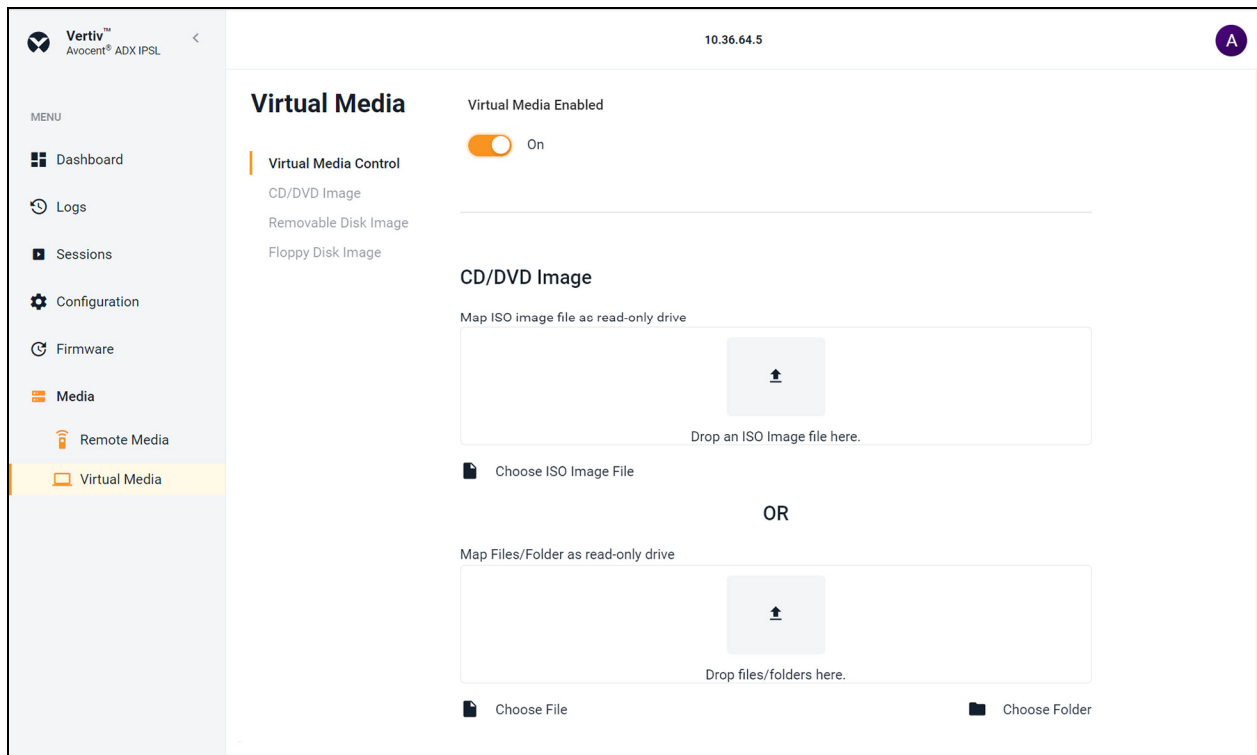
Map a virtual media drive:

Virtual media control is disabled (Off mode) by default.

NOTE: Verify that the other user is not using the virtual media feature on a different device or website if you are unsuccessful to enable virtual media control to On mode.

To map a virtual media drive:

Figure 2.2 Virtual Media Overview



1. From the Media screen, select *Virtual Media*.
2. Use the slider under Virtual Media Enabled to enable On mode. This action will show the features of virtual media to map .iso or .img files or folder.

To map an .iso image file or Files/Folder:

1. Select *CD/DVD Image*.
2. Drag and drop an .iso image file to Drop an ISO Image file here. option or click *Choose ISO Image File* to map single .iso image file.

-or-

Drag and drop files/folder to Drop files/folder here. option or click *Choose File* or *Choose Folder* to map file/folder which contains more than one .iso image files.

3. From the open dialogue box, navigate to the folder and select .iso image, files or folder and click *Open* or *Upload* as per your selection in [Step 2](#). This action will map an .iso image file, files, or folder with read-only access as per selection in [Step 2](#).

To map an .img file:

1. Select either *Removable Disk Image* or *Floppy Disk Image* to map an .img file.
2. Drag and drop an .img file to Drop an image file here option or click *Choose Image File*.
3. From the open dialogue box, navigate to the folder and select an .img file and click *Open*. This action will map an .img file with read-only access.

NOTE: After a physical drive or image is mapped, it can be used on the target device.

To unmap a virtual media drive:

1. From the Virtual Media menu, under the mapped drive click *Unmap* button to unmap that drive.
2. At the prompt, click *OK* to unmap the drive. This action will unmap a drive from the target device.

2.2 Serial Management

The Avocent ADX IPSL IP serial device provides remote access to your serial devices. To modify your serial communication parameters, see [Serial interfaces](#) below.

To launch a serial session:

1. From the Dashboard screen, under Serial Interfaces, move your mouse over the device you want to access.
2. On the right of the column, click the *Launch Console icon*.

-or-

Click the *vertical ellipses* and select whether to launch the serial session in a new tab or new window.

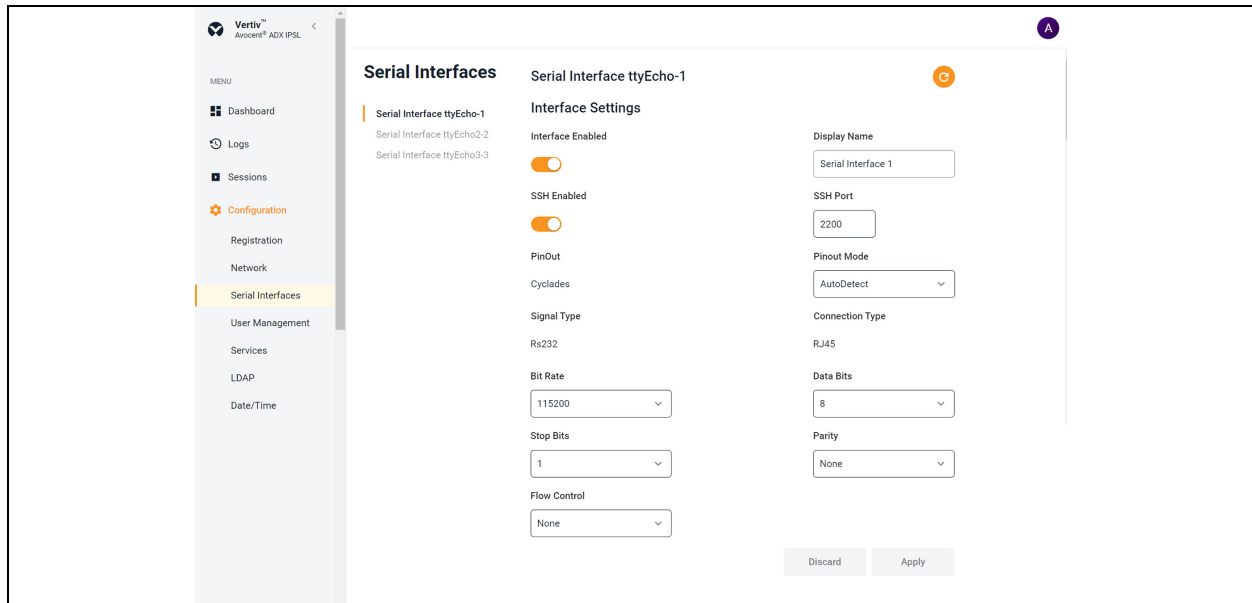
To end a serial session:

Click the *user icon* in the upper right-hand corner and select *Exit Serial Viewer*.

2.2.1 Serial interfaces

Serial Interfaces option allows you to configure the serial communication parameters.

Figure 2.3 Serial Interfaces Overview

**To configure Serial Interfaces:**

1. From the Configuration screen, select *Serial Interfaces*.
2. Ensure that the Interface Enabled option is enabled.

NOTE: If the Interface Enabled option is disabled, the serial sessions cannot be launched.

NOTE: If the SSH Enabled option is enabled, you will be connected to the serial port that is configured as per SSH port through SSH client.

3. Use the drop-down menu to select appropriate values for the below-listed fields:
 - Bit Rate.
 - Stop Bits.
 - Flow Control.
 - Data Bits.
 - Parity.
4. Enter name in the Display Name field. You can give name of port to which it is connected. For example, serial interface 1.
5. Click *Apply*.

NOTE: To set the default values, use the refresh icon in the upper right corner.

NOTE: Once the Serial Interface is configured, it will be displayed in the Dashboard screen from where you can launch sessions.

2.3 Administration

With Administrator login rights, you can access the Administration screen, configure and manage the appliances and the associated targets.

2.3.1 Registration settings

The Avocent ADX IPSL IP serial device can be operated completely standalone or can be managed by an ADX management station (Vertiv™ Avocent® ADX RM1048P rack manager or Vertiv™ Avocent® ADX MP1000 management platform).

Figure 2.4 Registration Overview

To do Registration Settings:

NOTE: The hostname configuration and registrar IP address are obtained from the DHCP server that assigned the IP address to the Avocent ADX IPSL IP serial device when Config via DHCP is enabled using the ON/OFF button and configuration items are identified in the DHCP data.

1. From the Configuration screen, select *Registration*.
2. Click on the *radio button* to switch the Mode to “Managed”.

NOTE: When the Mode is selected to Managed, all the UI control features in the Configuration except Registration and Serial Interfaces are disabled.

3. Enter the IP address of the ADX system (Avocent® ADX RM1048P rack manager or Avocent® ADX MP1000 management platform) in the Registrar IP Address field that should manage the Avocent ADX IPSL IP serial device.
4. Enter the hostname in the Registrar Hostname field.

NOTE: Enter **.RMx.interbox.vertiv.com* if the managing ADX system is Avocent® ADX RM1048P rack manager, and **.MPx.interbox.vertiv.com* if the managing ADX system is Avocent® ADX MP1000 management platform, in the Registrar Hostname field.

5. Click *Apply*.

NOTE: The Registrar IP Address and Registrar Hostname configuration information is disregarded when Config via DHCP is disabled.

NOTE: The values in the Interval and WSS Port fields are pre-defined and must not be changed. These values are used only in specific troubleshooting situations.

2.3.2 User management

Access to ports can be optionally restricted, based on permissions an administrator can assign to custom user groups. The Avocent ADX IPSL IP serial device has a default user of admin and three pre-defined user groups listed below:

- Administrator.
- Operator.
- Read only.

Users

When the Users tab is selected, all the users for the Avocent ADX IPSL IP serial device are displayed.

To view more options in the Users tab:

- Click a *user* to open its properties sidebar.
- Click the *vertical ellipses* to the right of the device to change the selected user's password or delete or disable.

NOTE: From this sidebar, you can also view user properties and groups.

- Click the *Edit icon* to configure the user's name and email and enable account and password expiration rules.

To create a new user:

1. From the User Management screen, select the *Users* tab.
2. Click the *plus (+) icon* to add a new user.
3. Use the slider to enable the user, enter the username and password and use the drop-down menu to select the user role.
4. Click *OK*.

To delete a user:

1. Check the box next to the user you want to delete.
2. Click the *Delete icon* above the list of users.
3. At the confirmation screen, click *Yes* to delete.

2.3.3 Roles and permissions

This screen displays the roles and permissions of the target and system.

The Avocent ADX IPSL IP serial device has three default system roles, as listed below:

1. Administrator.
2. Operator.
3. Read only.

Click a *role* to open its properties sidebar.

2.3.4 Logs

When an event occurs, it is saved in the audit log that can be viewed from the Logs screen.

To navigate event Logs screen:

- Use the search bar to search for a specific event.
- Use the drop-down menu to filter by name, resolved, or severity.
- Use the arrows next to each column to sort each event.
- Click the *icons* in the upper right to clear or refresh the logs.

2.3.5 Authentication providers

From the sidebar, click *LDAP* to view a list of configured authentication providers.

You can Authenticate through AD/LDAP. The Avocent ADX IPSL IP serial device supports remote group authorizations for the LDAP authentication method.

NOTE: The authentication method configured for the Avocent ADX IPSL IP serial device is used for the authentication of any user who attempts to login through SSH or the web UI.

To configure an LDAP server:

1. Use the slider to enable LDAP.
2. Enter the server address and server port in the appropriate fields. To add more than one server, click the *plus (+) icon*.
3. Select the binding method for the LDAP service. Using the login credential uses the Avocent ADX IPSL IP serial device credentials. To configure different credentials, select *Use Configured Credential* and enter the username and password.
4. For search settings, enter the Base DN and UID attributes.
5. Click *Apply* at the bottom of the screen.

To delete an LDAP server:

Click the *Delete icon* under the Remove icon.

Active directory

You can enable role-based security on the Avocent ADX IPSL IP serial device, to map your Active Directory remote group to a role on the Avocent ADX IPSL IP serial device.

NOTE: When you are mapped to any local role, and the related security is enabled and configured, Active Directory remote group provides you the related permission after login.

To enable role mapping:

1. From the LDAP screen, use the slider under Active Directory Settings to enable role-based security.
2. Click the *plus (+) icon*.
3. Enter the name of your Active Directory remote group in the appropriate field.
4. Use the drop-down menu to select the local role the remote group will be mapped with.
5. Click *Apply*.

To delete a role mapping:

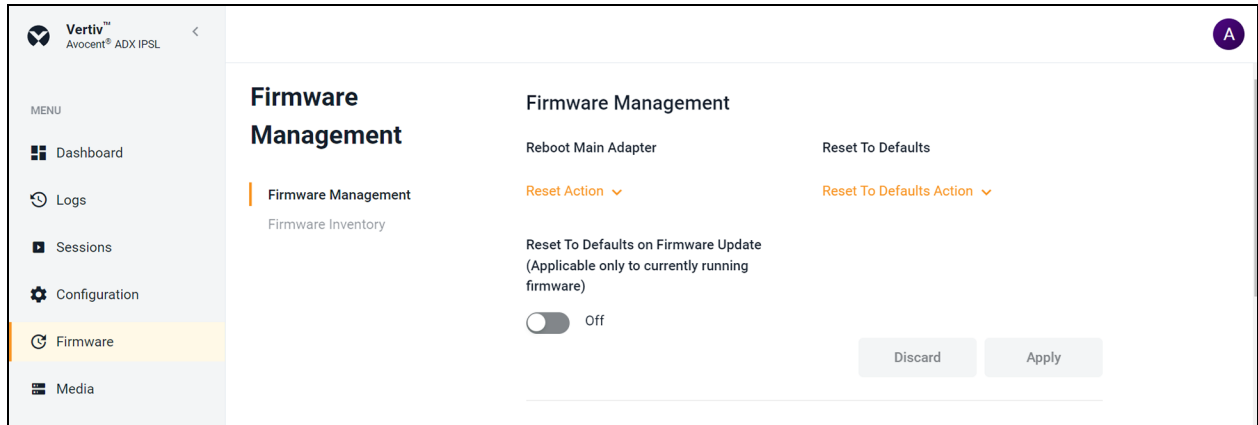
Click the *Remove icon* next to the group you want to remove.

2.3.6 Firmware updates

From the Firmware Updates screen, you can view scheduled firmware updates. Click the *Refresh icon* to refresh the page.

Firmware management

Figure 2.5 Firmware Management Overview



To reboot main adapter:

1. Click on Firmware from the sidebar, select *Firmware Management*.
2. Click on the drop-down arrow next to Reset Action and select either graceful reboot into primary firmware or graceful reboot into failover firmware.
3. Click OK. This action will change currently running firmware.

NOTE: After changing to the firmware, it will reboot device immediately.

NOTE: By default, currently running firmware is Primary Firmware.

To reset currently running firmware settings to default values:

1. Click on Firmware from the sidebar, select *Firmware Management*.
2. Click on the drop-down arrow next to Reset To Defaults Action and select either ResetAll, PreserveNetwork, or PreserveNetworkAndUsers.
3. Click OK. This action will reset all settings to factory defaults for the currently running firmware as per the selection.

NOTE: After resetting all the settings as per the selection, it will reboot device immediately.

To reset defaults values on firmware update:

For currently running firmware update is Off as default and needs to be enabled to update.

NOTE: It is applicable only to the currently running firmware.

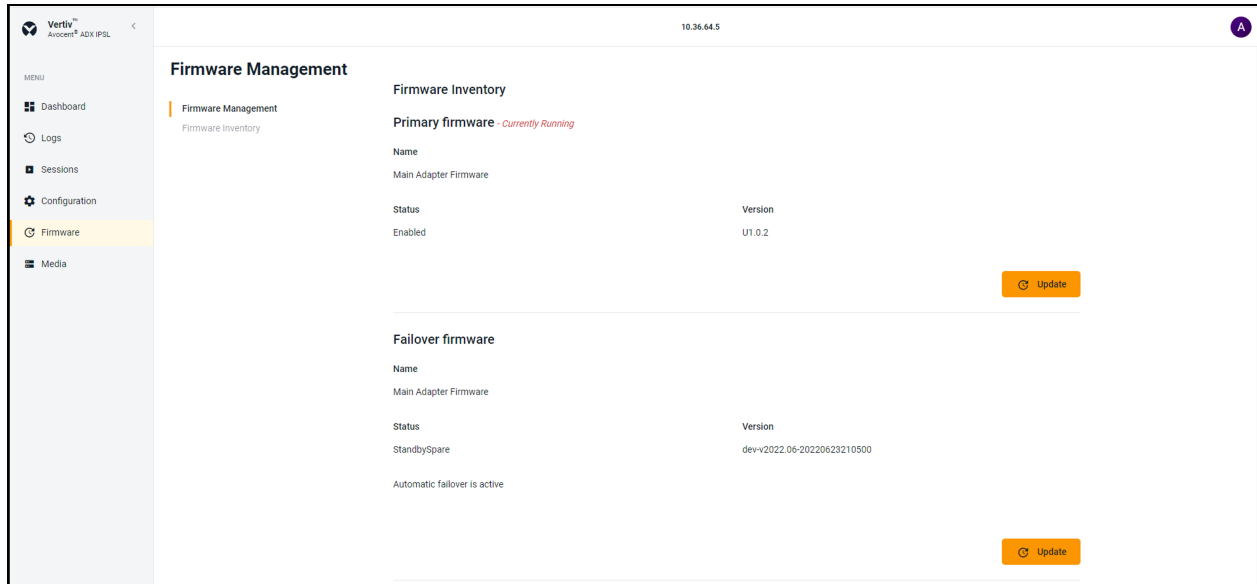
1. Click on Firmware from the sidebar, select *Firmware Management*.
2. Use the slider to enable or disable On mode.
3. Click *Apply*. This action will reset settings of firmware update to defaults values.

Firmware inventory:

From the sidebar, click on Firmware to view firmware inventory. Here you will find primary firmware and failover firmware. From this screen you will get details about name, version, and status of the firmware.

NOTE: Make sure that the Avocent ADX IPSL IP serial device is in Standalone mode.

Figure 2.6 Firmware Management Overview



To update Primary Firmware or Failover Firmware:

1. Click on Update under respective firmware.
2. Copy the tftp file path and paste it in the TFTP Path field.

-or-

Click on Image Upload to drag and drop your file/folder or Choose file for updating firmware.

3. Click Start *Update*.

2.3.7 System settings

From the System Settings screen, you can view and configure system settings for the Avocent ADX IPSL IP serial device.

Password policy

You can configure global password rules for all the user accounts. You can also configure account expiration settings. Password with minimum eight characters and all other password expiration rules are default.

To configure global password rules:

1. From the System Settings screen, under the Password Policy, use the slider to enable, or disable password policy.
2. Use the arrows to define interval for password change under Password Change Interval field.
3. Use the slider to enable or disable password age check.
4. Use the arrows to define duration for checking password age under Password Duration field.
5. Click *Apply*.

NOTE: When the global password policy is updated for enhanced security, all local user accounts will be flagged to change the password at next login.

FIPS mode settings

The FIPS mode of operation can be enabled or disabled via the web UI and is executed after a reboot.

The FIPS mode of operation is disabled as default and needs to be enabled to change/update.

To enable or disable FIPS mode:

1. From the System Settings screen, under the FIPS Mode Settings, use the slider to enable or disable FIPS mode.
2. Click *Apply*. FIPS mode changes on the next reboot.

NOTE: The selected FIPS mode gets enabled even after performing a factory reset.

2.3.8 Network configuration

From this screen, you can view and configure network settings.

Ethernet interfaces

The Avocent ADX IPSL IP serial device has two physical network interfaces (USB0 and eth0). Network settings can only be changed for USB0. The interfaces eth0 reflect link status of the one LAN ports. The USB0 network settings are applicable when you connect a computer to the Avocent ADX IPSL IP serial device through the micro USB cable. Each interface has an individual MAC address and can be assigned an IP address via DHCP or statically.

To configure the ethernet interface:

1. From the sidebar, click *Configuration - Network*.
2. Under the Ethernet Interfaces, click on the interface you want to configure to open its properties panel.
3. Expand the Network Configuration to view the settings for the selected interface. Click the *Edit icon* to configure the selected interface.
4. For assigning a static IP, enter the IP address, prefix length and gateway address in the appropriate fields and click *Save*.

Appendices

Appendix A: Technical Specifications

Table A.1 Avocent ADX IPSL IP serial device Technical Specifications

Item	Value
Ports	
Network	2 x 1G LAN ports - 1 x PoE, 1 x Service Processor connectivity.
Serial	1 x USB-A, 2 x RJ-45.
Power	1 x Power port.
Power	
1 PoE port	802.3 at Type 2 PoE+ PD.
External Power Supply	+5V 25W.
Environmental	
Storage	-20 °C to 70 °C (-4 °F to 158 °F).
Operating	0 °C to 50 °C (32 °F to 122 °F).
Indicators	
LED Lights	2 x Tri color lights.
Dimensions	
Height x Width x Depth	1.6 inches x 4.1 inches x 6.6 inches (41 mm x 105 mm x 168 mm).
Weight	0.73 lbs (0.332 kg).

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