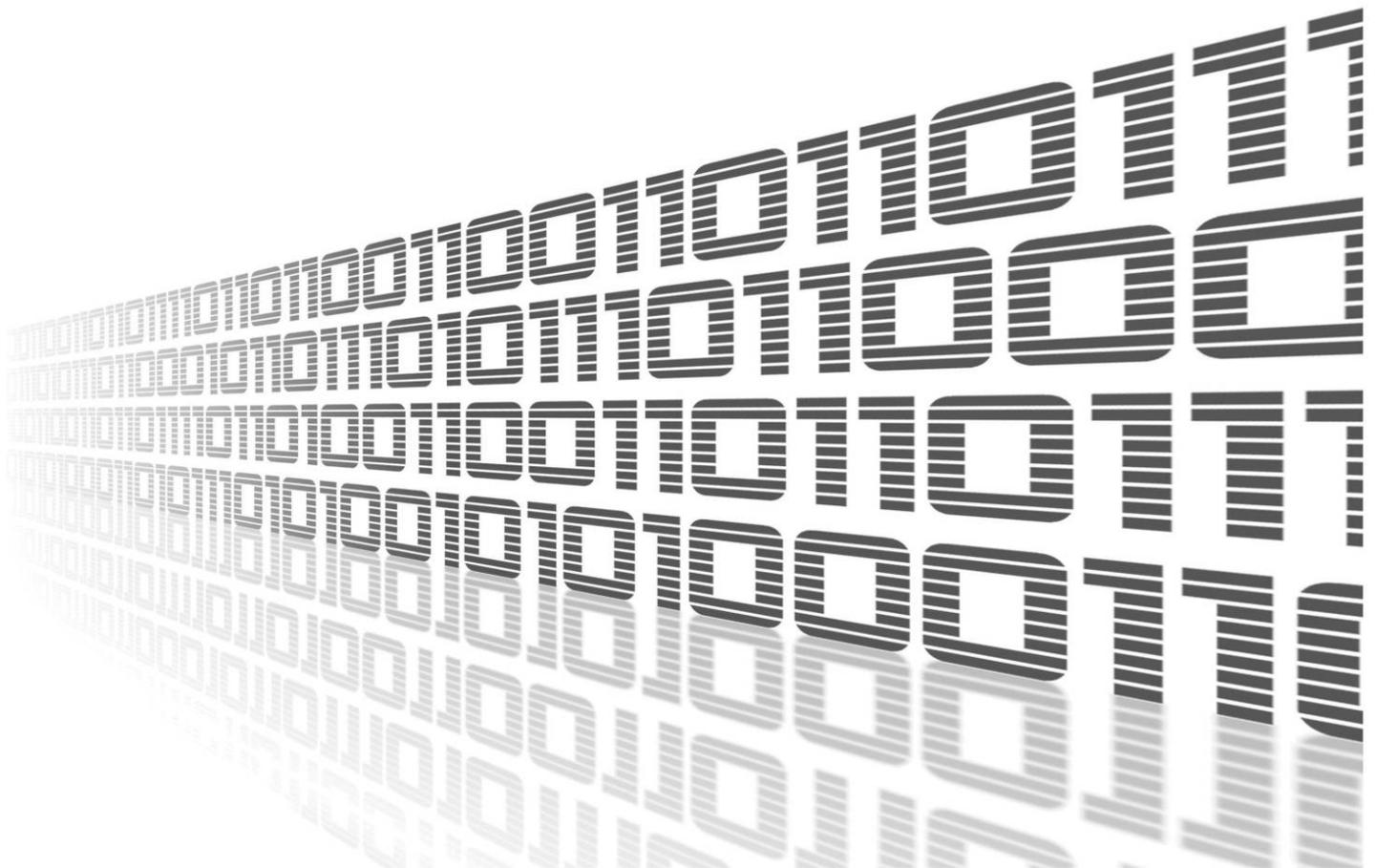


ADVANTECH



VirtualHere USB Server



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Used symbols



Danger – Information regarding user safety or potential damage to the router.



Attention – Problems that can arise in specific situations.



Information – Useful tips or information of special interest.

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1. Router App Description

1.1 Introduction

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- This router app is not included in the standard router firmware. For instructions on how to upload and install router apps, refer to the *Configuration Manual*.
 - Communication with some USB devices, such as webcams or audio adapters, requires a low-latency network connection (ideally < 20 ms). The app may not work properly over slow cellular networks due to latency constraints.
 - The free version of this app has limited functionality. Full features can be unlocked by purchasing a VirtualHere license.
 - Make sure that you have an Advantech router equipped with a USB port and that the port is enabled in *Configuration* → *USB Port* → *Enable USB port*.

The *VirtualHere USB Server* router app allows USB devices connected to the router's USB port to be accessed remotely over a network, just as if they were physically plugged into a client computer. This technology is commonly known as USB over IP or USB over Ethernet. It is ideal for situations where a USB device needs to be used by a computer that is not in the same physical location.

The system consists of two components:

- **The VirtualHere USB Server:** This is the router app itself, which runs on the Advantech router. It manages the physical USB devices and makes them available on the network.
- **The VirtualHere USB Client:** This software runs on a remote computer (e.g., Windows, macOS, or Linux). It connects to the server and presents the shared USB devices to the operating system.

When a remote client uses a USB device, it appears to the client's operating system as a locally connected device, ensuring that existing drivers and software function without modification.

1.2 VirtualHere Software

The entire implemented solution is provided by *VirtualHere*. For more information, refer to the official website at www.virtualhere.com. Client software is available for Windows, macOS, and Linux (both GUI and console versions). You can download the clients from www.virtualhere.com/usb_client_software.

The free version of the software has certain limitations: it allows sharing only one device with one client at a time, and it does not support configuring a different network port or using SSL encryption. To unlock these advanced features, a license must be purchased from the VirtualHere website at www.virtualhere.com/purchase. Once you receive the license key, you can paste it into the *License* field in the router app's configuration to upgrade.

1.3 Application GUI

The *VirtualHere USB Server* app has a web interface for configuration, which is accessed by clicking the app's name on the *Router Apps* page of the main router web interface. The left pane of this interface contains a menu for navigating the app's pages, including *Configuration*, *Status*, and *Customization*. The *Return* link in the *Customization* section takes you back to the main router web interface.



Status
Global System Log
Configuration
Global
Customization
Return

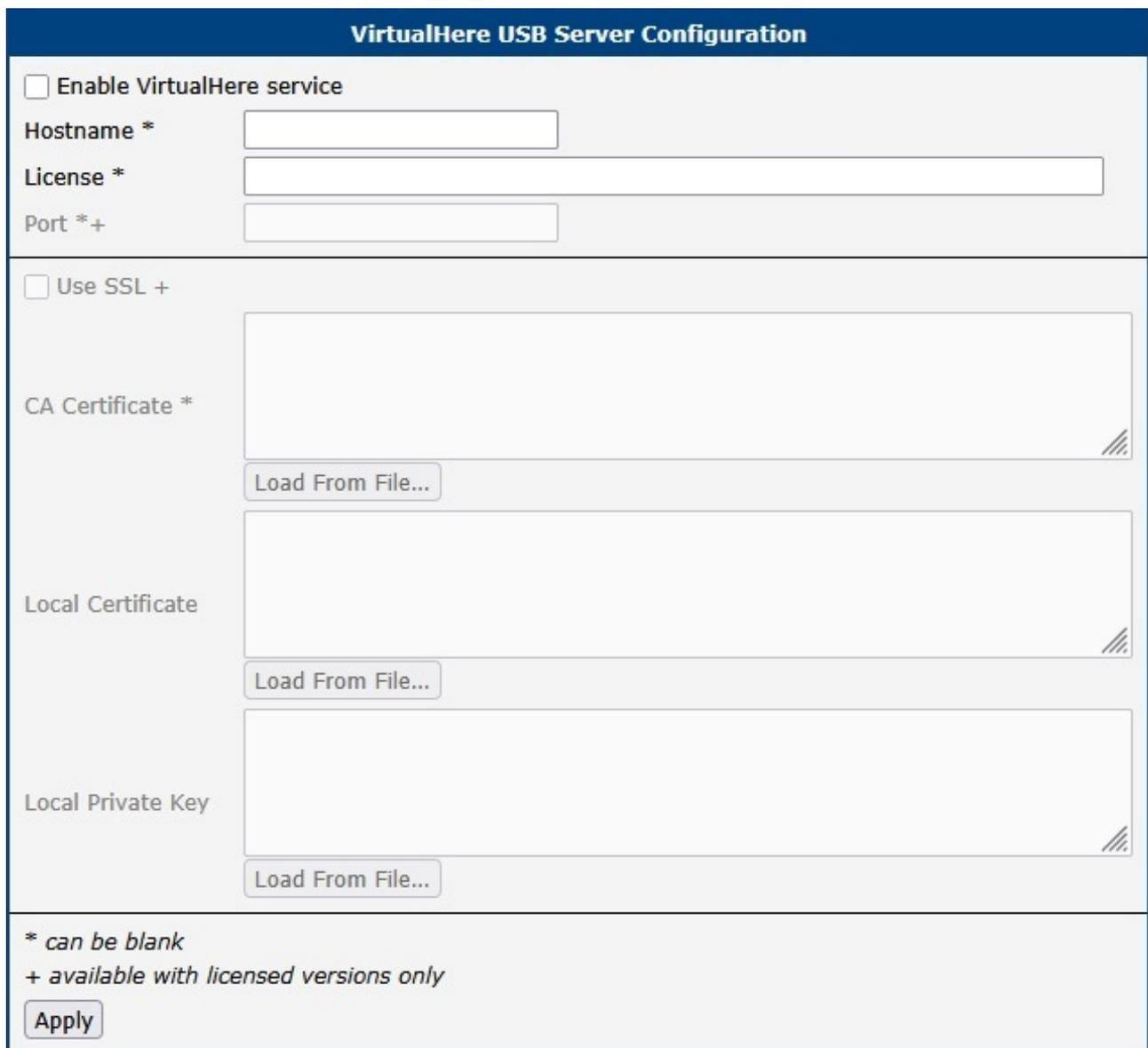
Figure 1: Menu of Web Interface

2. Configuration

The *VirtualHere USB Server* app is configured using the *Global* page, located in the *Configuration* section of the app's web interface.

2.1 Global

The *Global* page contains the main settings for the *VirtualHere USB Server* service. The configuration form is shown in the figure below.



The screenshot shows the 'VirtualHere USB Server Configuration' form. It is divided into several sections. The first section has a checkbox for 'Enable VirtualHere service'. Below it are three input fields: 'Hostname *', 'License *', and 'Port *+'. The second section has a checkbox for 'Use SSL +'. Below it are three large text areas for 'CA Certificate *', 'Local Certificate', and 'Local Private Key', each with a 'Load From File...' button. At the bottom, there are two lines of explanatory text: '* can be blank' and '+ available with licensed versions only', followed by an 'Apply' button.

Figure 2: Configuration Form *Global*

Configuration Item	Description
<i>Enable VirtualHere service</i>	Enables or disables the VirtualHere USB server on the router. The service must be enabled for clients to connect.
<i>Hostname</i>	Sets a descriptive name for this server. This name will be displayed in the VirtualHere client software, making it easier to identify the router on the network. If left blank, the router's default hostname, <code>router</code> , will be used.
<i>License</i>	A field to enter a license key for the VirtualHere software. A license is required to share multiple devices simultaneously or to access other premium features. This field can be left blank if using the free version. To get the license visit website at www.virtualhere.com/purchase .
<i>Port</i>	Defines the TCP port number on which the server listens for incoming client connections. The default port is <code>7575</code> for standard connections and <code>7574</code> for SSL connections. This field can be left blank to use the default port(s).
<i>Use SSL</i>	Enables SSL/TLS encryption for all communication between the server and clients. This secures the data stream and is highly recommended for use over untrusted networks. This option is available only in licensed versions.
<i>CA Certificate</i>	The Certificate Authority (CA) certificate used to verify client certificates when SSL is enabled. You can paste the certificate text or load it from a file. This field is optional and is used only when SSL is enabled.
<i>Local Certificate</i>	The server's SSL certificate. You can paste the certificate text or load it from a file. This field is optional and is used only when SSL is enabled.
<i>Local Private Key</i>	The server's private key corresponding to the local certificate. You can paste the key text or load it from a file. This field is optional and is used only when SSL is enabled.

Table 1: Application Configuration

3. Usage Example

3.1 Sharing a USB Flash Drive



This guide assumes that you have an Advantech router equipped with a USB port and that the port is enabled in *Configuration* → *USB Port* → *Enable USB port*.

This section provides a step-by-step guide on how to share a USB flash drive connected to the router's USB port with a computer over the network. This example uses the free, unlicensed version of the app. When connected, the drive will appear on your computer as if it were physically plugged in.

1. Configure the Router

In the router app's configuration, you can optionally set a *Hostname*. Ensure the service is enabled and click the *Apply* button.

VirtualHere USB Server Configuration

Enable VirtualHere service

Hostname *

License *

Port *+

.....

* can be blank
+ available with licensed versions only

Apply

Figure 3: VirtualHere Router App Configuration

2. Connect the Flash Drive

Connect the USB flash drive to the router's USB port. You can monitor the *System Log* page to confirm that the device has been detected.

3. Download the Client Software

Navigate to the official VirtualHere website and download the client application suitable for your operating system:

www.virtualhere.com/usb_client_software

4. Install and Run the Client

Install and run the downloaded application. On some platforms, installation may not be required; the application can be run directly.

5. Connect to the Server

Automatic Discovery: If your computer is on the same local network (LAN) as the router, the client application should discover the server automatically. The router's name will appear in the client window, along with a list of available USB devices.

Manual Connection: If the server does not appear automatically (e.g., due to a different network or a firewall), you can add it manually. In the client, right-click on *USB Servers* and select *Specify Servers*. Enter the router's IP address and port in the format `IP_address:port` and confirm.

6. Use the USB Flash Drive

Once the server is connected, the USB drive will appear in the client's device list. Right-click on the device name and select *Use This Device* from the context menu, as shown in the figure below. The device's status will change to *In use by you*.

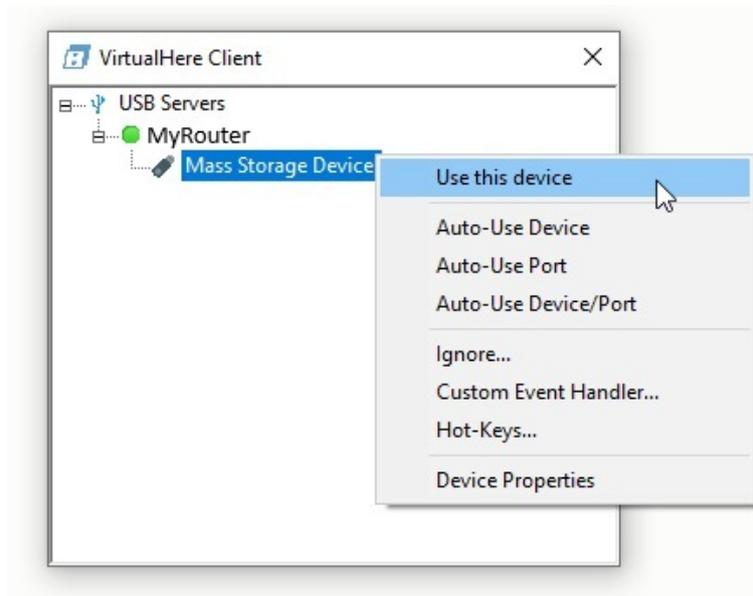


Figure 4: VirtualHere Client

7. Finished

The USB flash drive should now appear on your computer (e.g., in "This PC" on Windows or Finder on macOS) just as if it were plugged directly into a local USB port. You can now work with its files normally.

8. Disconnecting

To disconnect the device, right-click it again in the client and select *Stop Using This Device*. This will release the device and make it available to other users.

4. Application Activity Monitoring

4.1 Global Status

The *Global Status* page, accessible via *Status* → *Global*, displays real-time information about the server's activity. This page is essential for verifying that the service is running correctly.



Figure 5: Global Status

4.2 System Log

For troubleshooting, you can view detailed log messages by navigating to the *System Log* page. The log provides reports about the *VirtualHere USB Server* app's activity, including client connections, device sharing events, and potential errors.

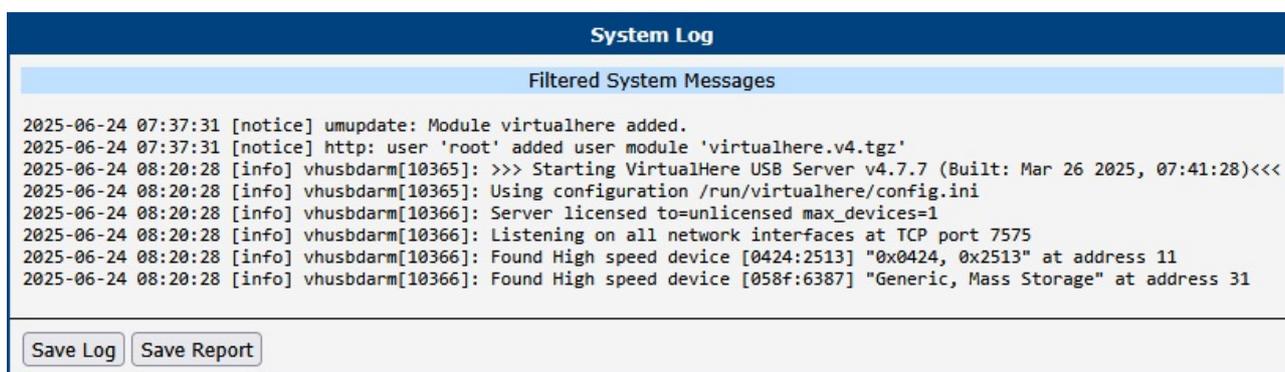


Figure 6: System Log

5. Related Documents

You can obtain product-related documents on the *Engineering Portal* at icr.advantech.com.

To get your router's *Quick Start Guide*, *User Manual*, *Configuration Manual*, or *Firmware*, go to the [Router Models](#) page, find the required model, and switch to the *Manuals* or *Firmware* tab, respectively.

The *Router Apps* installation packages and manuals are available on the [Router Apps](#) page.

For *Development Documents*, go to the [Development](#) page.