

MatterPlugin

for HomeSeer

User Manual

Version 1.0

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1. Introduction

MatterPlugin brings the Matter smart home standard to your HomeSeer system. Matter is a universal protocol that allows smart home devices from different manufacturers to work together seamlessly.

What is Matter?

Matter is a new smart home standard developed by major technology companies including Apple, Google, Amazon, and Samsung. Devices with Matter support can be controlled by any Matter-compatible system, regardless of brand.

What Can MatterPlugin Do?

- Add Matter devices to your HomeSeer system
- Control lights, switches, dimmers, thermostats, door locks, and sensors
- See device status updates in real-time
- Share your devices with Apple Home, Google Home, or Amazon Alexa
- Support for both WiFi and Thread network devices

2. Requirements

Before installing MatterPlugin, make sure you have the following:

System Requirements

- HomeSeer HS4 (version 4.0 or later)
- Windows 10/11 or Windows Server
- .NET Framework 4.8 (usually pre-installed on Windows 10/11)
- .NET 8 Runtime

Network Requirements

- WiFi network (2.4 GHz recommended for best device compatibility)
- For Thread devices: A Thread Border Router (such as Apple HomePod Mini, Google Nest Hub, or dedicated Thread router)
- IPv6 support enabled on your network

Supported Devices

MatterPlugin supports many types of Matter devices:

- On/Off Switches and Plugs
- Light Dimmers
- Color Bulbs and Stripes
- Full Color (RGB) Lights
- Thermostats
- Door Locks
- Contact Sensors
- Motion Sensors
- Temperature and Humidity Sensors
- Light Sensors
- Environmental Sensors (CO2, PM2.5)
- Window Coverings (Blinds/Shades)

3. Installation

Step 1: Download the Plugin

1. Download the MatterPlugin installation package from the HomeSeer plugin store or the provided download link.
2. Save the file to a location you can easily find.

Step 2: Install via HomeSeer

3. Log into your HomeSeer web interface.
4. Navigate to Plugins > Manage.
5. Click "Add Plugin" and select the downloaded package.
6. Wait for the installation to complete and enable the plugin.

Step 3: Verify Installation

After installation, you should see "MatterPlugin" in your Plugins menu. Click on it to open the plugin interface. The Status page should show "Connected" indicating the plugin is running properly.

4. Getting Started

When you first open MatterPlugin, you will see several tabs at the top of the page:

- **Settings**
- **Devices**: Shows all your Matter devices and lets you manage them
- **Add Device**: Add new Matter devices to your system
- **Utilities**: Advanced tools and troubleshooting

Understanding the Device Table

The Devices tab shows a table with all your Matter devices. Each row represents one device with the following information:

- **Checkbox**: Click to select devices for actions
- **Name**: The device name
- **Type**: What kind of device it is (Light, Switch, Sensor, etc.)
- Model:
- **IP Address**: IP v4 or IP v6 for Thread devices
- **Endpoints**: Number of endpoints
- **Status**: Signal strength indicator. Blue for WiFi brown for Thread Red if not connected NC. If device doesn't report signal strength than WiFi and Thread words are used, meaning that the device is connected.
- **HS Ref**: Whether the device is added to HomeSeer and it's HS reference number

5. Adding Devices (Commissioning)

"Commissioning" is the process of adding a new Matter device to your system. This is sometimes called "pairing" in other smart home systems.

Before You Begin

7. Make sure your new device is powered on and in pairing mode. Check the device manual for how to enter pairing mode.
8. Find the device's QR code or 11-digit pairing code. This is usually on a sticker on the device or in the packaging.
9. Make sure your HomeSeer computer is connected to the same network as the device.

Adding a Device

10. Click the "Add Device" tab in MatterPlugin.
11. Enter the 11-digit pairing code from your device (numbers only, no dashes).
12. Click the "Commission" button.
13. Wait for the process to complete. You will see progress messages as the plugin discovers and configures the device.
14. When successful, the device will appear in your Devices list.

WiFi vs Thread Devices

WiFi Devices: These connect directly to your home WiFi network. The commissioning process will automatically configure the device's WiFi connection. There are two possible scenarios here

- a) Device is already on your network and has IP address. Say you used devices app to add it to your network. In this case select IP Discovery and put in the IP address of the device if you know it. It is optional but it helps as it avoids the unreliable mDNS discovery process.
- b) device is in "virgin" "factory" state never adopted to your network. Use BlueTooth commissioning and provide WiFi credentials

Thread Devices: These use a special low-power mesh network. You need a Thread Border Router already set up on your network. MatterPlugin will connect to Thread devices through this border router.

TBR (Thread Border Router) is needed for operating thread devices. Unfortunately border routers by Google, Apple and similar steer devices to their own ecosystem and will NOT work with any third party Matter Controllers like ours. Fortunately there is a solution. You need to install your own Thread Border Router (TBR). It can run on an

inexpensive RPi and it is easy to setup and maintain. See Chapter 10 about detailed instructions of how to install your own TBR. 6. Managing Devices

Adding Devices to HomeSeer

After commissioning a device, you need to add it to HomeSeer to control it through events and the HomeSeer interface:

15. Go to the Devices tab.
16. Click the checkbox next to the device(s) you want to add.
17. Click the green "Add to HomeSeer" button.
18. The devices will now appear in your HomeSeer device list and can be controlled through events.

Removing Devices from HomeSeer

If you want to remove a device from HomeSeer control (but keep it in MatterPlugin):

19. Select the device(s) using the checkboxes.
20. Click the yellow "Remove from HomeSeer" button.

Removing Devices Completely

To remove a device from your Matter network entirely:

21. Select the device(s) using the checkboxes.
22. Click the red "Remove from Fabric" button.
23. The device will be reset and can be commissioned to a different system.

Refreshing Device Status

Click the "Refresh" button to update the device list and get the latest status from all devices. This is useful if a device's status seems out of date.

7. Sharing Devices with Other Apps

One of Matter's best features is multi-admin support. This means you can control the same device from multiple apps like Apple Home, Google Home, or Amazon Alexa, all at the same time.

How to Share a Device

24. Go to the Devices tab.
25. Click the checkbox to select exactly ONE device. The Share button only works with one device at a time.
26. Click the "Share" button (light blue).
27. A popup window will appear showing a QR code and an 11-digit pairing code.
28. Open your other app (Google Home, Apple Home, etc.) and choose to add a new Matter device.
29. Scan the QR code or enter the 11-digit code when prompted.
30. Complete the setup in the other app.

Important Notes

- The pairing code is only valid for 15 minutes. If it expires, click Share again to generate a new code.
- You can share a device with multiple apps, but each app needs its own sharing session.
- Some older devices may have limits on how many apps can control them at once.

8. Troubleshooting

Device Won't Commission

- Make sure the device is in pairing mode (usually a blinking light)
- Double-check the pairing code - enter only numbers, no dashes
- Make sure the device is on the same network as your HomeSeer computer
- Factory reset the device and try again
- For Thread devices, make sure your Thread Border Router is working

Device Shows Not Connected (NC)

- Check if the device has power
- Check your WiFi network is working
- Click the Refresh button to update device status
- Some battery-powered devices (Thread Sleepy End Devices) may take longer to respond leave it alone and check half hour later. They do sync and stay synced until you restart MatterPlugin.

Commands Don't Work

- Make sure the device is added to HomeSeer (check the HS Status column)
- Check the device's signal strength - weak signal can cause problems
- Some devices (like door locks) may need calibration before commands work

Sharing Won't Work

- Make sure you selected only ONE device
- Use the code within 15 minutes before it expires
- Make sure the other app's phone/tablet is on the same network

Getting Help

If you continue to have problems, use the "Export Diagnostics" feature in the Utilities tab. This creates a file you can share with support to help diagnose the issue.

9. Advanced Features

These features are for advanced users who want to customize or troubleshoot their setup.

Cluster Editor

The Cluster Editor allows you to view and modify the command definitions used by MatterPlugin. This is useful if you need to adjust timeouts or add support for new device features.

31. Go to Utilities tab
32. Click "Load Clusters" to see all available clusters
33. Click on a cluster to expand and see its commands
34. Edit parameters as needed
35. Click "Save Changes"
36. Restart the plugin for changes to take effect

Warning: Only modify cluster settings if you understand what you're doing. Incorrect settings can prevent devices from working.

Export Diagnostics

The Export Diagnostics feature creates a ZIP file containing logs and configuration information. This helps support diagnose issues. Sensitive information like security keys is excluded.

10. Setting Up a Thread Border Router

Thread is a low-power mesh networking protocol used by many Matter devices, especially battery-powered sensors and smart home accessories. To use Thread devices with MatterPlugin, you need a Thread Border Router (TBR) that connects the Thread network to your regular IP network.

What is a Thread Border Router?

A Thread Border Router acts as a bridge between your Thread devices and your home network. Some commercial products like Apple HomePod Mini, Google Nest Hub, and Amazon Echo (4th gen) include built-in Thread Border Routers. However, you can also build your own using a Raspberry Pi, which gives you more control and works great with MatterPlugin.

What You Need

- **Raspberry Pi 4 or Raspberry Pi 5** (2GB RAM or more recommended)
- **MicroSD card** (16GB or larger)
- **Power supply** for your Raspberry Pi
- **Thread Radio Module:** ESP32-C6 or ESP32-H2 board (recommended), or a Nordic nRF52840 dongle
- **Ethernet cable** (recommended for reliable connection)
- **Another computer** to set up the Raspberry Pi

Step 1: Prepare the Raspberry Pi

37. Download the Raspberry Pi Imager from [raspberrypi.com](https://www.raspberrypi.com)
38. Insert your MicroSD card into your computer
39. Open Raspberry Pi Imager and select "Raspberry Pi OS Lite (64-bit)"
40. Click the gear icon to configure: enable SSH, set username/password, configure WiFi (optional)
41. Write the image to the SD card
42. Insert the SD card into your Raspberry Pi and power it on

Step 2: Flash the Thread Radio

Your ESP32-C6 or ESP32-H2 needs special firmware to work as a Thread radio. This is called RCP (Radio Co-Processor) firmware.

43. Connect the ESP32 board to your computer via USB
44. Visit the ESP Launchpad website: espressif.github.io/esp-launchpad
45. Select "Thread Border Router" and your board type (ESP32-C6 or ESP32-H2)
46. Click "Connect" and select your device's COM port
47. Click "Flash" and wait for the process to complete
48. Disconnect the ESP32 from your computer

Step 3: Install OpenThread Border Router (OTBR)

Connect to your Raspberry Pi via SSH (using a program like PuTTY on Windows) and run these commands:

```
sudo apt update && sudo apt upgrade -y
```

Install Docker (makes OTBR installation easier):

```
curl -fsSL https://get.docker.com | sudo sh
sudo usermod -aG docker $USER
```

Log out and log back in, then connect your ESP32 radio to the Raspberry Pi USB port.

Find the device name:

```
ls /dev/ttyUSB* /dev/ttyACM*
```

Note the device name (usually /dev/ttyUSB0 or /dev/ttyACM0). Then start OTBR:

```
docker run -d --name otbr --privileged --network host -v /dev/ttyUSB0:/dev/ttyUSB0
openthread/otbr:latest --radio-url spinel+hdlc+uart:///dev/ttyUSB0?uart-
baudrate=460800
```

Note: Replace /dev/ttyUSB0 with your actual device name if different.

Step 4: Form the Thread Network

49. Open a web browser and go to: [http://\[raspberry-pi-ip-address\]](http://[raspberry-pi-ip-address])
50. You should see the OpenThread Border Router web interface
51. Click "Form" in the menu to create a new Thread network
52. Enter a network name (any name you like)
53. Click "Form" button
54. Wait for the network to be created (this takes about 30 seconds)

Step 5: Get the Operational Dataset

This is the most important step! MatterPlugin needs the Thread network's "Operational Dataset" to commission Thread devices.

55. In the OTBR web interface, click on "Dataset" in the menu
56. Look for "Active Operational Dataset" section
57. You will see a long string of hexadecimal characters (letters and numbers)
58. Copy this entire string - you will need it for MatterPlugin

Alternatively, you can get it via SSH command:

```
docker exec -it otbr ot-ctl dataset active -x
```

The output will look something like this:

```
0e080000000000001000000030001235060004001ffffe00208dead00beef00cafe0708fddead00beef000005108967452
301efcdab67452301efcdab030f4f70656e5468726561642d34353637010234560410445f2b5ca6f2a93a553943214362
4244a0c30c0402a0f7f8
```

Step 6: Configure MatterPlugin

59. Open MatterPlugin in HomeSeer

60. Go to the Settings tab
61. Find the "Thread Network Configuration" section
62. Paste the Operational Dataset string into the text field
63. Click "Save"
64. MatterPlugin is now ready to commission Thread devices!

Verifying Your Setup

To verify your Thread Border Router is working:

- The OTBR web interface should show "Leader" or "Router" as the device role
- You should see network information like Channel, PAN ID, and Network Name
- When you commission a Thread device in MatterPlugin, it should connect within 30-60 seconds

Tips for Reliable Operation

- **Use Ethernet:** Connect your Raspberry Pi with an Ethernet cable for the most reliable connection
- **Central location:** Place the Raspberry Pi in a central location in your home for best Thread coverage
- **Keep it running:** The Border Router must stay on for Thread devices to work
- **Auto-start:** Docker containers restart automatically after a reboot by default