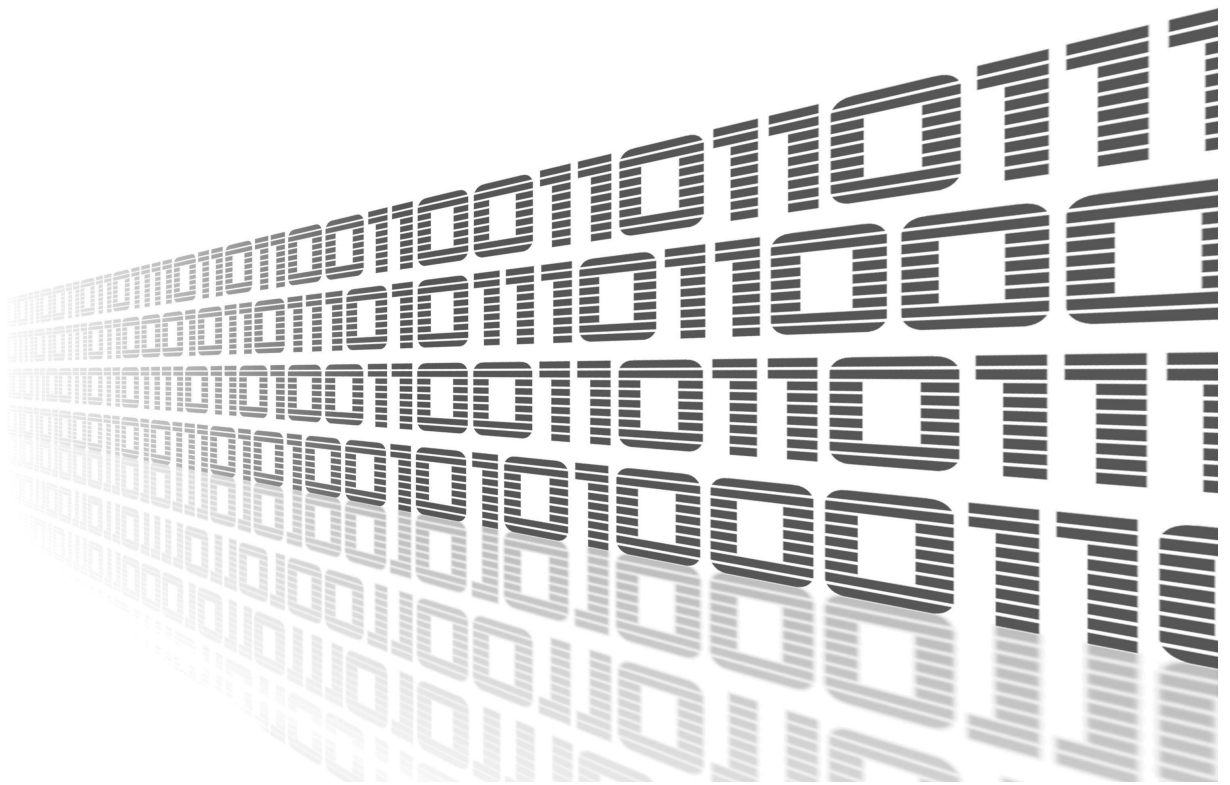




Layer 2 Firewall

APPLICATION NOTE



ADVANTECH

Used symbols



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



Attention – Problems that can arise in specific situations.



Information, notice – Useful tips or information of special interest.



Example – Example of function, command or script.



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1. Module usage



This router app is not contained in the standard router firmware. Uploading of this router app is described in the Configuration manual (see Chapter [Related Documents](#)).

1.1 Description of the module

Layer 2 Firewall router app can be used to specify filtering rules for data incoming to the router based on source MAC address. The rules are processed on Data link layer, which is second layer of the OSI model, and are applied to all interfaces, not just for WAN interface.

1.2 Web interface

Once the installation of the module is complete, the module's GUI can be invoked by clicking the module name on the *router apps* page of router's web interface.

Left part of this GUI contains menu with *Status* section, followed by *Configuration* section which contains the configuration page *Rules* for definition of the rules. *Customization* section contains only the *Return* item, which switches back from the module's web page to the router's web configuration pages. The main menu of module's GUI is shown on figure 1.



Figure 1: Main menu

1.3 Rules configuration

Configuration of the rules can be done on *Rules* page, under *Configuration* menu section. Configuration page is shown on figure 2. There are twenty five rows for the rules definition.

Each line consists of the check box, *Source MAC Address* field and *Action* field. Checking the checkbox enables the rule on the line. Source MAC address must be entered in double

dots format and is case insensitive. This field can be left blank, which means it match all the MAC addresses. An action can be set to allow or to deny option. Based on that, it allows incoming packets or denies incoming packets. The rules are processed from the top to the bottom. If a MAC address of an incoming data match the condition on a rule line, it is evaluated and the processing is terminated.

Checking the check box called *Enable filtering of layer 2 frames* at the top of the page will enable the entire process of filtering. To apply any changes on the *Rule* configuration page the *Apply* button at the bottom of the page must be clicked on.

The screenshot shows a 'Rules Configuration' window. At the top, there is a checkbox labeled 'Enable filtering of layer 2 frames'. Below this is a table with two columns: 'Source MAC Address *' and 'Action'. There are three rows in the table, each with a checkbox, a text input field, and a dropdown menu set to 'allow'. Below the table, there is a note: '* can be blank'. At the bottom of the window is an 'Apply' button.

| | Source MAC Address * | Action |
|--------------------------|----------------------|--------|
| <input type="checkbox"/> | | allow |
| <input type="checkbox"/> | | allow |
| <input type="checkbox"/> | | allow |

* can be blank

Apply

Figure 2: Example of rules configuration



Disabling incoming packet for all MAC addresses (empty definition field) will cause impossibility of administration access to the router. The only solution then will be to perform HW reset of the router which will set the router to the default state including the setting of this router app.

1.4 Configuration example

On figure 3 is shown an example of rules configuration. In this case incoming communication from only four different MAC addresses is permitted. The fifth line with deny action must be set up to restrict communication from all other MAC addresses. The source address for this line is empty, so it match all MAC addresses.

Rules Configuration

Enable filtering of layer 2 frames

| Source MAC Address * | Action |
|--|---------|
| <input checked="" type="checkbox"/> A4:4C:C8:80:C7:53 | allow ▼ |
| <input checked="" type="checkbox"/> E1:C3:FF:85:A5:8C | allow ▼ |
| <input checked="" type="checkbox"/> E1:3D:74:52:E0:A1 | allow ▼ |
| <input checked="" type="checkbox"/> B7:C1:88:80:E1:50 | allow ▼ |
| <input checked="" type="checkbox"/> <input type="text"/> | deny ▼ |
| <input type="checkbox"/> <input type="text"/> | allow ▼ |

allow ▼

** can be blank*

Figure 3: Example of rules configuration

1.5 Module status

Current global status of the module can be listed on *Global* page under *Status* section as shown on figure 4.

Global Status

```
Module 12fw, iptables chain mod_12fw, is running
Module 12fw, ip6tables chain mod_12fw, is running
```

Figure 4: Status page

2. Related Documents

You can obtain product-related documents on *Engineering Portal* at icr.advantech.cz address.

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