

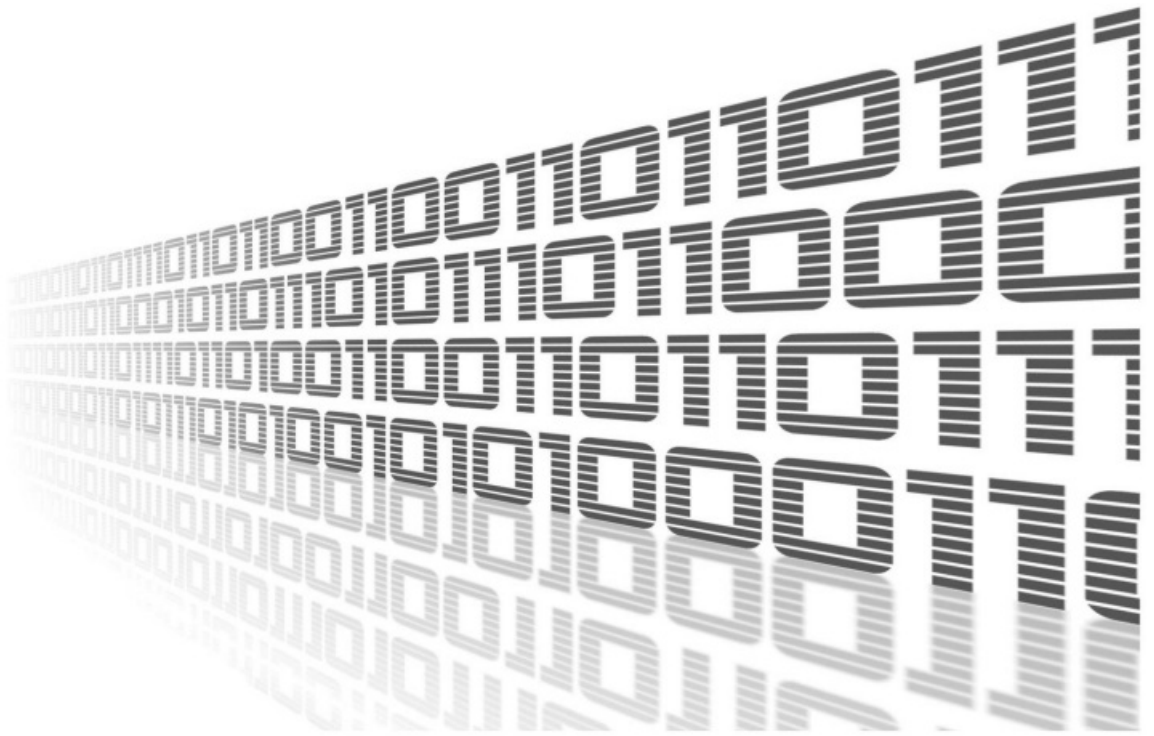
# ADVANTECH UDP Communication Watchdog Router App User Guide



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## UDP Communication Watchdog



Advantech Czech s.r.o., Sokolska 71, 562 04 Usti nad Orlici, Czech Republic  
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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.



Example - Example of function, command or script.

## 1. Changelog

### 1.1 UDP Communication Watchdog Changelog

- First release.

## 2. Description of the Router App



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).

This router app is a **UDP communication watchdog** - it checks the specific UDP packet responses in Smart Router and if no responses come back, it switches the PPP (cellular) connection to other SIM card in the Smart Router. It is intended for reliable connection of lottery terminals sending UDP packets via Smart Router to the responder server in Internet. See the operating principle on Figure 1 bellow.

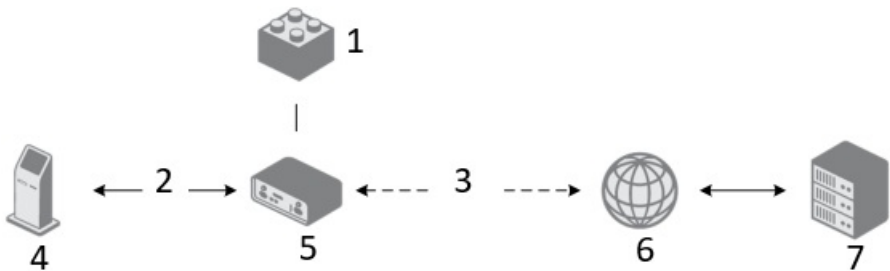


Figure 1: UDP Communication Watchdog operating principle

1. UDP Communication Watchdog UM (No responses? Switch SIM)
2. UDP
3. Cellular
4. Lottery Terminal
5. Smart Router
6. Internet
7. Responder Server

The router app interface has only one Configuration item in the menu and the Return item to return back to the routers's GUI. When enabled with default settings, it switches the cellular connection after 4 UDP responses missed. Error and SIM switch logging is accessible on System Log page of the router's GUI.

### UDP Communication Watchdog

| Customization          | Configuration   |
|------------------------|---|
| <a href="#">Return</a> | <div><input checked="" type="checkbox"/> Enable UDP Communication Watchdog</div> <div><div>Responder address</div><div>10.70.150.230</div></div> <div><div>Responder port</div><div>53401</div></div> <div><div>Terminal start port</div><div>50000</div></div> <div><div>Terminal end port</div><div>50156</div></div> <div><div>Max. response time</div><div>15</div><div>sec</div></div> <div><div>Switch SIM after</div><div>4</div><div>packets lost</div></div> <div><div>Apply</div></div> |

Figure 2: UDP Communication Watchdog Router App

## 3. Configuration

In this chapter, the configuration of the UDP Communication Watchdog is described. Go to the Configuration page in the Communication Watchdog section of the UDP Communication Watchdog router app - it is also the landing page of the router app. To enable, tick the Enable UDP Communication Watchdog checkbox and click Apply button. The other configuration items are described in the table below.

Configuration

☒ Enable UDP Communication Watchdog

Responder address

10.70.150.230

Responder port

53401

Terminal start port

50000

Terminal end port

50156

Max. response time

15

sec

Switch SIM after

4

packets lost

Apply

Figure 3: UDP Communication Watchdog Configuration

| Item                              | Description  |
|-----------------------------------|--|
| Enable UDP communication watchdog | Enable the UDP Communication Watchdog. This is necessary for UDP packet checker to run and switch SIMs in case of failure.           |
| Responder address                 | IP address of the responder server in the Internet. Either IPv4, IPv6 or domain name is allowed. The default value is 10.70.150.230. |
| Responder port                    | Port of the responder server in the Internet. Default 53401.   |
| Terminal start port               | First port (UDP) of the Lottery terminal connected to the router. Default is 50000. There can be a pool of more connected terminals. |
| Terminal end point                | Last port (UDP) of the Lottery terminal connected to the router. Default is 50156. There can be a pool of more connected terminals.  |
| Max. response time                | Time to wait for the answer before considering it the lost packet. Default is 15 seconds.  |
| Switch SIM after X packets lost   | Number of lost packets to switch to other cellular connection. Default is 4.   |

Table 1: UDP Communication Watchdog Configuration

4. Behavior and System Log

Behavior related notes and logging information are described in this Chapter.

4.1 Supervised UDP traffic

Only specific UDP packets are monitored these going from a local device (lottery terminal) to the Internet responder and specific responses back. Only UDP packets from configured ports range are tracked.

The UDP packets are matched by a destination IP (when going from local device to responder) and source IP and the port number when going back from the responder to the local device (lottery terminal). Only source and destination of UDP traffic is monitored. The payload of UDP packets is not monitored.

## 4.2 Switching of the SIM cards

If the packets are going forth (being received from local device) but there are no responses, cellular connection is switched to another SIM card than the active one.

It is done by powering off the cellular module, setting another SIM card as default and powering on the cellular module to establish the new connection. There is no need of any additional SIM switching configuration in the router, but the Smart Router has to be in version with two SIM cards and both SIM cards has to be configured properly on Mobile WAN page in the Configuration section of the router's Web GUI (typically for two different carriers, both with same APN).

## 4.3 System Log

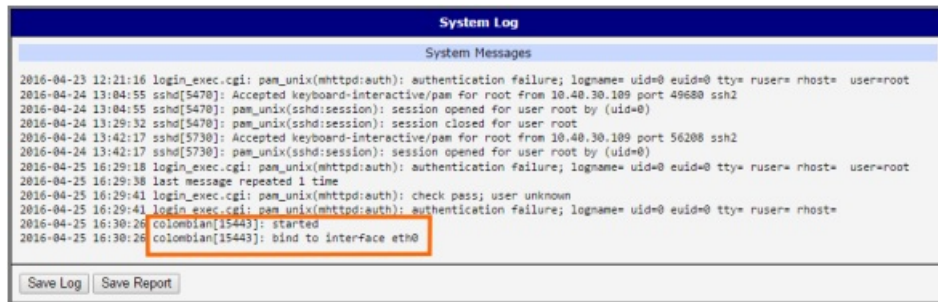


Figure 4: System Log

The router app logs are accessible on the System Log page of the router's main menu. The UDP Communication Watchdog logs start with the string as seen on the Figure 4.

Errors are logged by the router app. When it comes to switching the SIM cards, the following message is shown on the log:

missing <number> responses from responder – > changing SIM <number of SIM>

Then there are messages from cellular module being restarted and the new cellular connection being established.

## 5. Related Documents


You can obtain product-related documents on Engineering Portal at [icr.advantech.cz](http://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.

## Documents / Resources

|   |  |
|---|--|
|  | <p><b><a href="#">ADVANTECH UDP Communication Watchdog Router App</a></b> [pdf] User Guide<br/>UDP Communication Watchdog Router App, UDP, Communication Watchdog Router App, Watchdog Router App, Router App, App</p> |
|---|--|

## References

- [A Advantech 4G, 5G Cellular Routers & Gateways for IoT applications - Engineering Portal](#)
- [A Advantech 4G, 5G Cellular Routers & Gateways for IoT applications - Engineering Portal](#)
- [A DevZone - Cellular Routers Engineering Portal](#)
- [A Router Apps - Cellular Routers Engineering Portal](#)
- [A Router Models - Cellular Routers Engineering Portal](#)
- [User Manual](#)