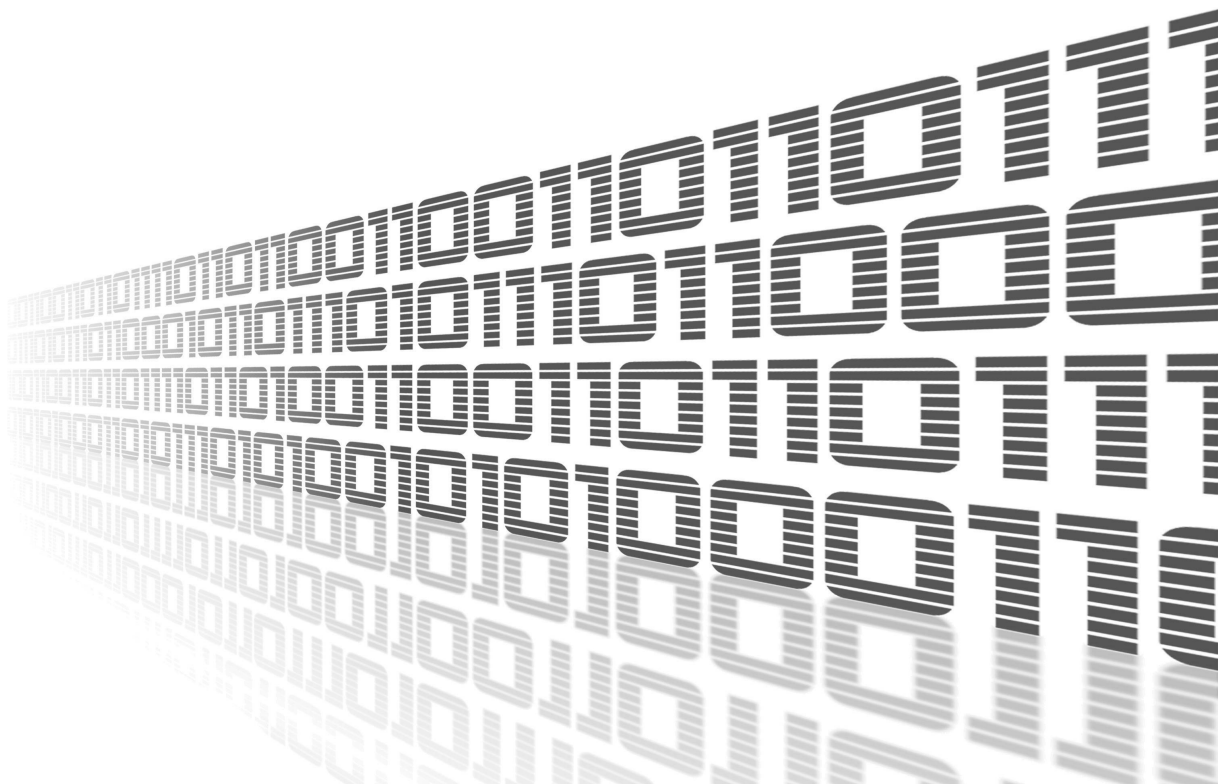




User Module

SSH client

APPLICATION NOTE



ADVANTECH

Used symbols



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



Attention – Problems that may arise in specific situations.



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



Example – example of function, command or script.



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

Document No. APP-0065-EN, revised on June 17, 2020. Released in the Czech Republic.

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1. Description of user module



User module *SSH client* is not contained in the standard router firmware. Uploading of this user module is described in the Configuration manual (see [1, 2]).



The user module is v2 and v3 router platforms compatible.

This module extends the portfolio of Advantech router functions by the ability to use it as an SSH client. This means that the module allows to establish the SSH connection to the remote router and execute commands on it. Due to the fact the SSH server is a standard part of the firmware, it is possible to connect to any Conel router.

SSH can be understood (from the administrator's perspective) as an encrypted tunnel between two devices based on client/server. In essence it is secure encrypted communications between two untrusted devices. Using SSH it is possible to access to shell of a remote device, create encrypted tunnels for remote access to a service which is behind a firewall, etc.

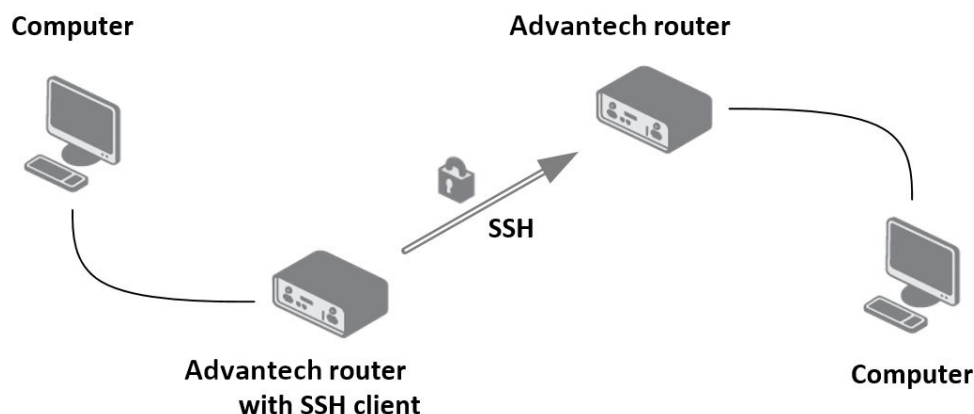


Figure 1: Model situation

For configuration *SSH client* user module is available web interface, which is invoked by pressing the module name on the *User modules* page of the router web interface. The left part of the web interface contains the menu with pages for monitoring (*Status*), configuration (*Configuration*) and customization (*Customization*) of the module. *Customization* block contains only the *Return* item, which switches this web interface to the interface of the router.

2. Configuration

The actual configuration of the *SSH client* user module configuration only consist in activation or deactivation of SSH client. For this purpose *Enable ssh client* item on *SSH client* page is meant for. If the module is activated, there is also displayed a line which informs about usage (*Usage: ssh parameters*). Basically, this is only information relaying to user that it is necessary to use a command line and `ssh` command with the appropriate parameters after activation. Activation or deactivation of *SSH client* module must be confirm by pressing the *Apply* button.

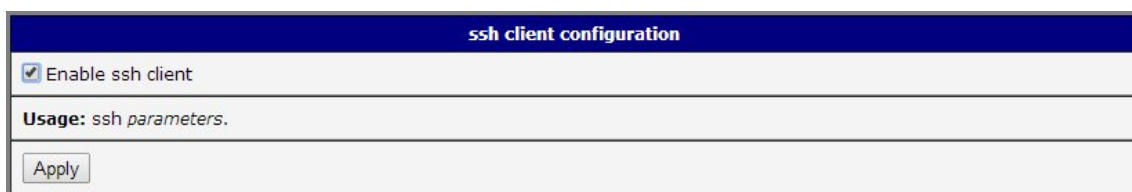


Figure 2: SSH client

If we want to connect from one router to another router via SSH (ie. log in to the remote shell), it is needed to enter to command line the following command (please note the `-p` parameter which allows to select other than the standard port 22 on the destination server):

```
ssh -p port_number user@server
```

In the event that it is necessary to enter only one command and access to the remote shell is not required, the command can be called directly:

```
ssh -p port_number user@server command
```



Detailed description of all parameters of `ssh` command can be found in the man page for this command (see for example [\[3\]](#)).

2.1 System log

In case of any problems it is possible to view the system log by pressing the *System Log* menu item. In the window are displayed detailed reports from individual applications running in the router including possible reports relating to the *SSH client* module.

The highlighted lines in the figure illustrate a situation where the system log displays information about running this module (ie. about running SSH client).

```

System Log
System Messages

2014-05-29 06:00:16 System log daemon started.
2014-05-29 06:00:18 bard[651]: bard started
2014-05-29 06:00:18 bard[651]: selectable backup routes:
2014-05-29 06:00:18 bard[651]: "Primary LAN"
2014-05-29 06:00:19 bard[651]: received signal 1
2014-05-29 06:00:19 bard[651]: backup route selected: "Primary LAN"
2014-05-29 06:00:19 bard[651]: script /etc/scripts/ip-up started
2014-05-29 06:00:20 bard[651]: script /etc/scripts/ip-up finished, status = 0x0
2014-05-29 06:00:21 bard[651]: script /etc/scripts/ip-down started
2014-05-29 06:00:21 dnsmasq[829]: started, version 2.68 cachesize 150
2014-05-29 06:00:21 dnsmasq[829]: no servers found in /etc/resolv.conf, will retry
2014-05-29 06:00:21 dnsmasq[829]: cleared cache
2014-05-29 06:00:25 sshd[957]: Server listening on 0.0.0.0 port 22.
2014-05-29 06:00:25 bard[651]: script /etc/scripts/ip-down finished, status = 0x0
2014-05-29 06:00:25 bard[651]: backup route released: "Primary LAN"
2014-05-29 06:00:26 bard[651]: backup route selected: "Primary LAN"
2014-05-29 06:00:26 bard[651]: script /etc/scripts/ip-up started
2014-05-29 06:00:27 bard[651]: script /etc/scripts/ip-up finished, status = 0x0
2014-05-29 06:00:33 ntpd[991]: system clock updated
2014-05-29 14:17:27 sshclient: Installed module
2014-05-29 14:17:27 sshclient: Defaults init
2014-05-29 14:17:27 sshclient: Start
    
```

Figure 3: System log

3. Related Documents

- [1] Advantech Czech: **v2 Routers Configuration Manual** (MAN-0021-EN)
- [2] Advantech Czech: **SmartFlex Configuration Manual** (MAN-0023-EN)
- [3] Advantech Czech: **SmartMotion Configuration Manual** (MAN-0024-EN)
- [4] Advantech Czech: **SmartStart Configuration Manual** (MAN-0022-EN)
- [5] Advantech Czech: **ICR-3200 Configuration Manual** (MAN-0042-EN)
- [6] Internet: http://linux.about.com/od/commands/l/blcmdl1_ssh.htm



Product related documents can be obtained on *Engineering Portal* at www.ep.advantech-bb.cz address.