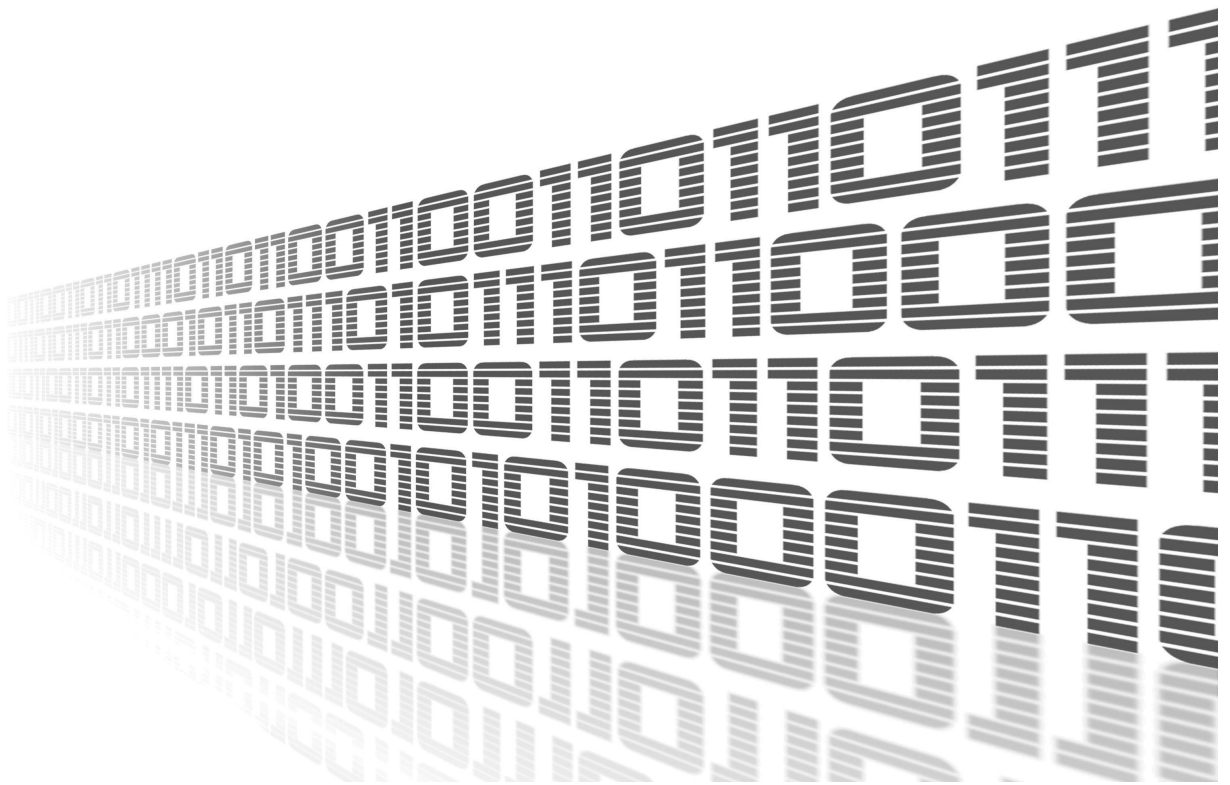




Technical Report 069

APPLICATION NOTE



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.



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1. Basic Information

Technical Report 069 (TR-069) is a technical specification of the Broadband Forum that defines an application layer protocol for remote management and provisioning of customer-premises equipment (CPE) connected to an Internet Protocol (IP) network. TR-069 uses the CPE WAN Management Protocol (CWMP) which provides support functions for auto-configuration, software or firmware image management, software module management, status and performance managements, and diagnostics.

2. Router App Description

2.1 Web Interface

After Router App installation, the module's GUI can be invoked by clicking the router app name on the Router Apps page of router's web interface.

Left part of this GUI contains menu with Status menu section, Configuration menu section and Information menu section. Customization menu 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 router app GUI is shown on Figure below.

Status
Overview
System Log
Configuration
Global
Information
Licenses
Customization
Return

Figure 1: Menu

2.2 Status

Status menu section contains Overview item where we can find detailed data about TR-069 service and received parameters.

```

Status Overview
-----
Services
-----
TR-069 service : running
{ "parameter": "Device.DeviceInfo.SpecVersion", "value": "1.0" }
{ "parameter": "Device.DeviceInfo.ProvisioningCode", "value": "" }
{ "parameter": "Device.DeviceInfo.Manufacturer", "value": "Advantech" }
{ "parameter": "Device.DeviceInfo.ManufacturerOUI", "value": "74FE48" }
{ "parameter": "Device.DeviceInfo.ProductClass", "value": "ICR-323x" }
{ "parameter": "Device.DeviceInfo.SerialNumber", "value": "0007231" }
{ "parameter": "Device.DeviceInfo.HardwareVersion", "value": "NA" }
{ "parameter": "Device.DeviceInfo.SoftwareVersion", "value": " 6.3.6 (2022-04-26) BETA" }
{ "parameter": "Device.DeviceInfo.UpTime", "value": "5416", "type": "xsd:unsignedInt" }
{ "parameter": "Device.DeviceInfo.DeviceLog", "value": "nf_nat64: nat64_prefix=64:ff9b::\96" }
{ "parameter": "Device.DeviceInfo.MemoryStatus.Total", "value": "509428" }
{ "parameter": "Device.DeviceInfo.MemoryStatus.Free", "value": "462008" }
{ "parameter": "Device.ManagementServer.URL", "value": "http://192.168.7.22:7547/" }
{ "parameter": "Device.ManagementServer.Username", "value": "easycwmp" }
{ "parameter": "Device.ManagementServer.Password", "value": "" }
{ "parameter": "Device.ManagementServer.PeriodicInformEnable", "value": "1", "type": "xsd:boolean" }
{ "parameter": "Device.ManagementServer.PeriodicInformInterval", "value": "300", "type": "xsd:unsignedInt" }
{ "parameter": "Device.ManagementServer.PeriodicInformTime", "value": "1970-01-01T23:04:37.128Z", "type": "xsd:dateTime" }
{ "parameter": "Device.ManagementServer.ConnectionRequestURL", "value": "http://192.168.7.231:7547/" }
{ "parameter": "Device.ManagementServer.ConnectionRequestUsername", "value": "74FE48-ICR%20323x-0007231" }
{ "parameter": "Device.ManagementServer.ConnectionRequestPassword", "value": "" }
{ "parameter": "Device.ManagementServer.ParameterKey", "value": "" }
    
```

Figure 2: Overview

While System log contains log messages.

```

2022-04-28 10:16:40 easycwmpd: external script exit
2022-04-28 10:16:40 easycwmpd: end session success
2022-04-28 10:18:18 easycwmpd: add event '2 PERIODIC'
2022-04-28 10:18:18 easycwmpd: start session
2022-04-28 10:18:18 easycwmpd: +++ HTTP CLIENT CONFIGURATION +++
2022-04-28 10:18:18 easycwmpd: url: http://192.168.7.22:7547/
2022-04-28 10:18:18 easycwmpd: ssl_verify: SSL certificate validation disabled.
2022-04-28 10:18:18 easycwmpd: --- HTTP CLIENT CONFIGURATION ---
2022-04-28 10:18:18 easycwmpd: configured acs url http://192.168.7.22:7547/
2022-04-28 10:18:18 easycwmpd: external script init
2022-04-28 10:18:18 easycwmpd: external: execute inform parameter
2022-04-28 10:18:18 easycwmpd: send Inform
2022-04-28 10:18:18 easycwmpd: +++ SEND HTTP REQUEST +++ ?xml version="1.0" encoding="UTF-8" stan
2022-04-28 10:18:18 easycwmpd: --- SEND HTTP REQUEST ---
2022-04-28 10:18:18 easycwmpd: +++ RECEIVED HTTP RESPONSE +++ ?xml version="1.0" encoding="UTF-8"
2022-04-28 10:18:18 easycwmpd: --- RECEIVED HTTP RESPONSE ---
2022-04-28 10:18:18 easycwmpd: receive InformResponse from the ACS
2022-04-28 10:18:18 easycwmpd: send empty message to the ACS
2022-04-28 10:18:18 easycwmpd: +++ SEND EMPTY HTTP REQUEST +++
2022-04-28 10:18:18 easycwmpd: +++ RECEIVED EMPTY HTTP RESPONSE +++
2022-04-28 10:18:18 easycwmpd: receive empty message from the ACS
2022-04-28 10:18:18 easycwmpd: external: execute apply service
2022-04-28 10:18:18 easycwmpd: external script exit
2022-04-28 10:18:18 easycwmpd: end session success
2022-04-28 10:19:43 https: user 'root' logged in from 10.40.30.102
    
```

Save Log Save Report

Figure 3: System log

2.3 Configuration

Global configuration is place where the configuration string should be. Most important lines are *option url*, *option username* and *option password* in the *config acs* part.

Global Configuration

Enable TR-069 (CPE WAN Management Protocol) service

Configuration:

```
# easycwmp uci configuration

config local
option enable '1'
option interface eth1
option port 7547
option ubus_socket /var/run/ubus.sock
option date_format %FT%T%z
option username easycwmp
option password easycwmp
option provisioning_code ''
option authentication 'Digest'
#Logging levels: Critic=0, Warning=1, Notice=2, Info=3,
Debug=4
option logging_level '4'

config acs
option url http://192.168.7.22:7547/
option username easycwmp
option password easycwmp
option parameter_key ''
option periodic_enable '1'
option periodic_interval '100'
option periodic_time '0001-01-01T00:00:00Z'
```

Apply

Figure 4: Global configuration

2.4 Licenses

Summarizes Open-Source Software (OSS) licenses used by this module.

TR-069 (CPE WAN Management Protocol) Licenses		
Project	License	More Information
easycwmp	GPLv2	License
openssl	OpenSSL	License
json-c	Json-c	License
libubox	Ubox	License
libuci	LGPLv2.1	License
libubus	LGPLv2.1	License
microxml	LGPL2	License
curl	Curl	License

Figure 5: Licenses

3. Example

In this example is *genieacs*¹ solution used as auto configuration server (acs). There are 3 routers managed with ACS.

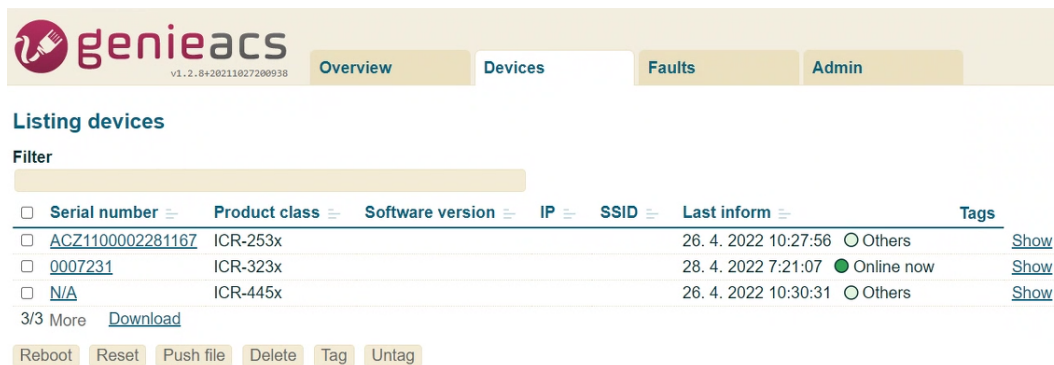


Figure 6: Devices

We can display the detail of each added device

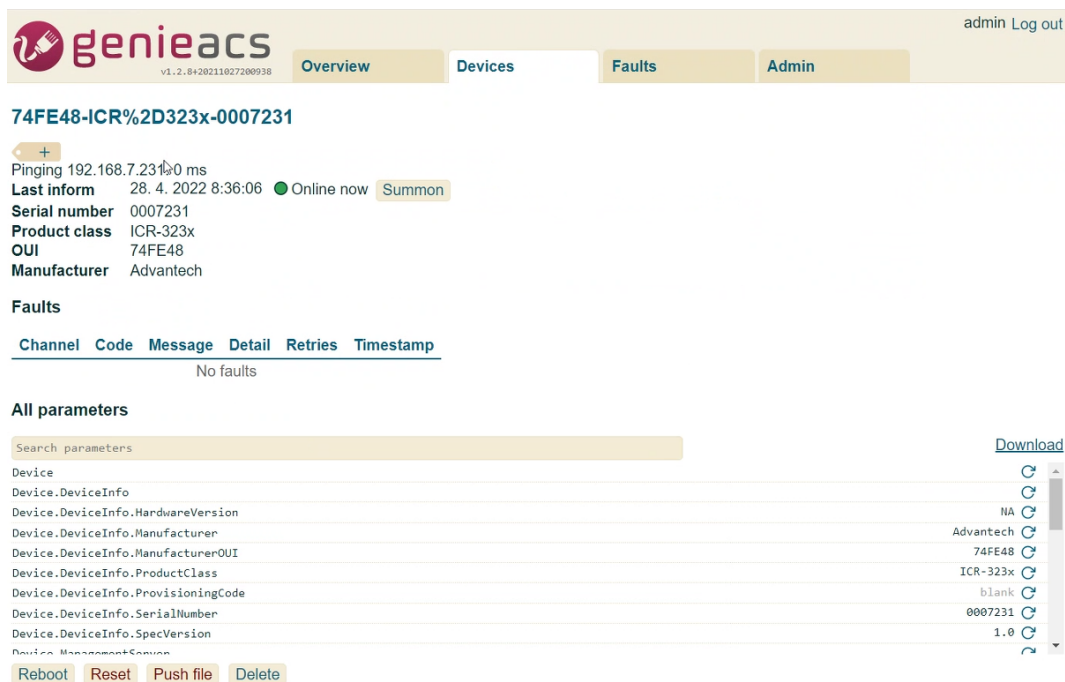


Figure 7: Detail of the device

¹<https://genieacs.com/>

In this detail it is possible to edit parameter values

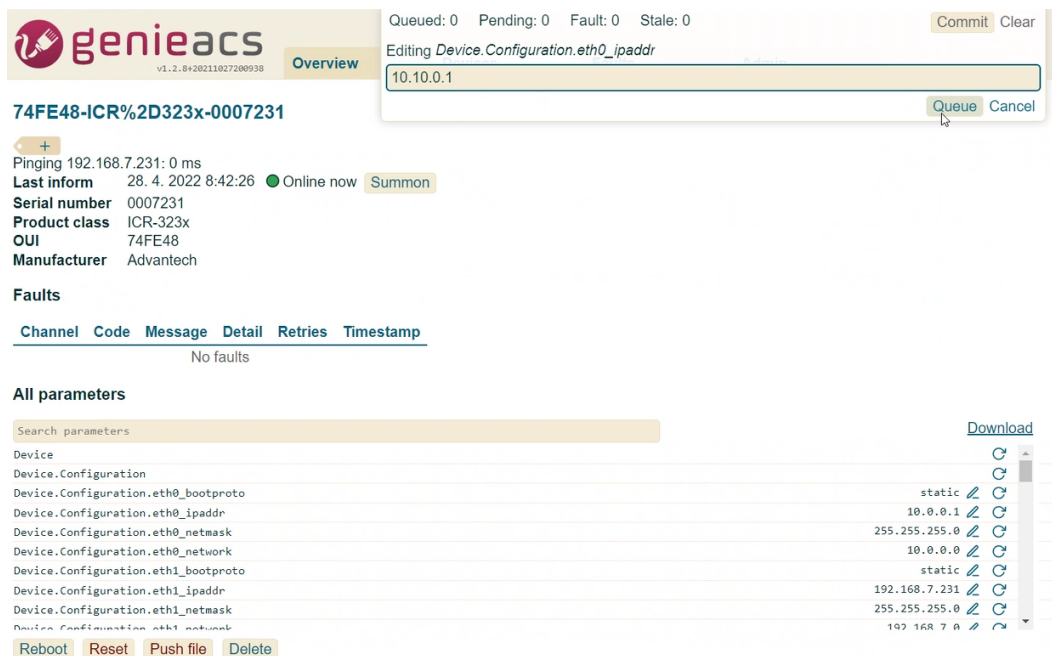


Figure 8: Device parameter edit

or even push files. Files, that can be pushed to router are only:

- Config files
- Router firmware

to the router which could be useful for changing config files of even uploading new firmware.

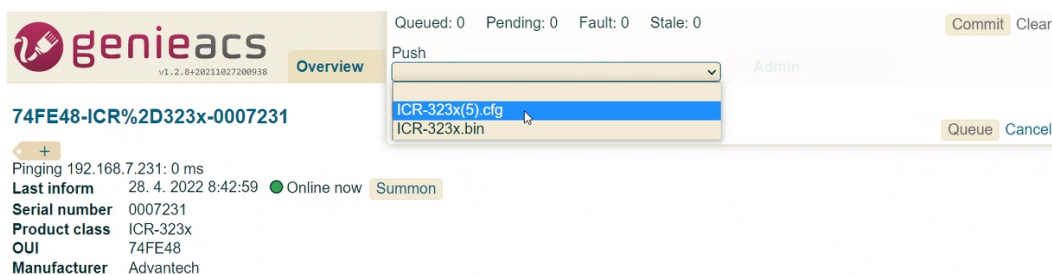


Figure 9: Push file to the device

4. 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.