PPP-controlled Settings for AVM’s FRITZ!OS
supported by AVM

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Content

History

Date	Version	Changes
2019-10-10	1.0	Initial version
2019-11-19	1.1	Line ID added
2020-05-05	1.2	TR-069 ACS Discovery added PAP-/CHAP-Info adapted Title changed

1 Introduction

FRITZ!OS offers a special interface for Internet Service Providers (ISP) to set some useful system parameters. It gives ISP an easy option to configure each device with individual settings. These settings are conveyed via the Point to Point Protocol (PPP RFC 1334, 1994) at dial-in time and applied immediately in FRITZ!OS. This document describes how to make use of PPP-controlled settings for FRITZ!OS.

1.1 Speed Rate Shaping

Using the speed rates over this interface is especially useful for service providers if they have customers with line speeds exceeding the speed rates declared in their contract. For instance, on a DSL line the synchronized speed is 100/40 Mbit/s, but the customer signed a contract that offers only 50/10 Mbit/s. In this case the service provider can utilize this interface to set the speed rates to 50/10 Mbit/s, so that FRITZ!OS will automatically adopt these new speed rates and set up the internal shaping parameters accordingly. This will ensure proper QoS configuration in FRITZ!OS for services such as voice or others, even during high data load situations.

In addition to the speed rates, the type of rate will be transferred. The type can be either layer 2 (L2, Ethernet) or layer 3 (L3, IP only). FRITZ!OS will interpret the transferred speed rates with respect to the type provided. L2 means that the speed rate already includes the Ethernet header – this is not the case for L3.

For clarification: Normally, Ethernet frames are transmitted in any case. But the type of rate instructs the FRITZ!OS to interpret the rate as a value either including the Ethernet header (L2) or not (L3) .

FRITZ!OS will check the plausibility of the transferred speed rates. If the speed rates are very close to or higher than the line speed, FRITZ!OS will use the line speed rate instead.
This allows the service provider to deliver customers speed rates irrespective of the available line speed.

The information will be transferred to the FRITZ!OS via PPP authentication and will be set in the PPP-PAP/CHAP authentication message, PAP=Code 2 or 3, CHAP=Code 3 or 4 (RFC 1334, 1994).

1.2 Line ID

The Line ID is provided only for information purposes and is displayed in the WebUI of the FRITZ!Box.

The information will be transferred to the FRITZ!OS via PPP authentication and will be set in the PPP-PAP/CHAP authentication message, PAP=Code 2 or 3, CHAP=Code 3 or 4 (RFC 1334, 1994).

1.3 TR-069 ACS Discovery

As part of PPP Authentication, a PPP server on the access network MAY be configured to include the ACS URL and the provisioning code in the PPP Authentication ACK. If FRITZ!OS needs to contact a ACS, it MAY use the PPP discovery mechanism if both conditions are met:
- FRITZ!OS has an empty value for the ‘ManagementServer.URL’ parameter
- FRITZ!OS has a PPP connection and authenticates successfully via PPP PAP or PPP CHAP

The information will be transferred to the FRITZ!OS via PPP authentication and will be set in the PPP-PAP/CHAP authentication message, PAP=Code 2, CHAP=Code 3 (RFC 1334, 1994).

The ACS URL MUST be in the form of a valid HTTPS URL. It indicates that FRITZ!OS MUST establish an SSL or TLS connection to the ACS. Other URLs than HTTPS will be ignored. The value of TR069URL is applied only if the ManagementServer.URL parameter is empty. The value of TR069PROVC is applied only if the ManagementServer.URL parameter is empty.

There is no PPP rediscover mechanism if FRITZ!OS obtained an ACS URL through PPP and it cannot reach the ACS.

FRITZ!OS will use DNS to resolve the IP address of the ACS from the host name component of the URL. The "host" portion of the ACS URL is used by FRITZ!OS to validate the certificate from the ACS. FRITZ!OS will authenticate the ACS using the root certificate store on FRITZ!OS.

Once FRITZ!OS has established a connection to the ACS via a CWMP Endpoint, the ACS MAY at any time modify the ACS URL Parameter (ManagementServer.URL) as well as the provisioning code (DeviceInfo.ProvisioningCode).

2 Variables

2.1 Speed rate downstream

SRD=xxxx

xxxx = speed rate in Kbit/s (1 Kbit/s = 1000 Bit/s)

2.2 Speed rate upstream

SRU=yyyy

yyyy = speed rate in Kbit/s (1 Kbit/s = 1000 Bit/s)

2.3 Speed rate type

SRT=zz

zz = speed rate type. Possible values are L2 or L3.
If the speed rate type is not delivered, the default value L3 will be used.

2.4 Line ID

LID=line-id

line-id = The Line ID.

2.5 TR-069 ACS URL

TR069URL=url

url = HTTPS URL of the ACS

url max. length: 128 Byte

allowed characters for url : [a-Z, 0-9, :.-_/]

2.6 TR-069 Provisioning Code

TR069PROVC=provisioningcode

provisioningcode = Provisioning Code

provisioningcode max. length: 64 Byte

3 Syntax

All parameters are optional. The ACK/NAK response message must have the following format:

SRD=xxxx#SRU=yyyy#SRT=zz#LID=line-id#TR069URL=url#TR069PROVC=provisioningcode

For example:

SRD=50000#SRU=10000#SRT=L2#LID=PROVXYZ.DEU.VL.ABCD#

or

SRD=50000#SRU=10000#LID=PROVXYZ.DEU.VL.ABCD#

or

LID=PROVXYZ.DEU.VL.ABCD#

or

SRD=50000#SRU=10000#TR069URL=https://myacs.xyz123.com:7547#TR069PROVC=setup#

3.1 Sample Trace