Configuration Guide

# RAK Industrial LPWAN Gateway Remote Management - DDNS

Version 1.1 | April 2020

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# 1. Overview

In this tutorial, we will describe how to use the fast and simple Dynamic Domain Name System (DDNS) Service for accessing RAK Industrial Gateways.

For accessing the Gateway behind a router, you have to consult with your router documentation in order to implement Port Forwarding or Demilitarized Zone (DMZ), so you can remotely access your Gateway.

For accessing the Gateway, when connected through an LTE network please contact your cellular service provider in order to implement Port Forwarding.

# 2. Registering a DDNS Service

Using DDNS you can assign a Domain name that you link to your Gateway's Real IP Address. This allows you to access your Gateway with a Domain name that is static and will not change even if a new IP address is assigned to the Gateway, making sure you don't have to keep a lengthy list of address that needs to be constantly updated. The DDNS service takes care of this for you.

## 2.1 Choose your DDNS provider

A list of providers supported by the RAK Industrial Gateway series can be found below:

| | | | |
|---|---|---|---|
| 3322.org | afraid.org [6] | changeip.com | cloudflare.com [2] [5] [6] |
| core-networks.de [6] | ddnss.de [6] | dhis.org [6] | dnsdynamic.org |
| dnsexit.com | dnshome.de [6] | dnsmax.com | dnsomatic.com |
| dnspark.com | do.de [6] | dtdns.com | duckdns.org [6] |
| duiadns.net [6] | dy.fi | dyndns.org [6] (dyn.com) | dyndnss.net |
| dyns.net | dynsip.org | dynu.com | dynv6.com [6] |
| easydns.com | editdns.net | goip.de [6] | google.com [5] [6] |
| he.net [6] | joker.com | loopia.se [6] (loopia.com) | mydns.jp [6] |
| myonlineportal.net [6] | mythic-beasts.com [6] | namecheap.com | nettica.com |
| no-ip.com [1] (noip.com) | no-ip.pl [6] | nsupdate.info [6] | nubem.com |
| ovh.com | regfish.de [6] | schokokeks.org | selfhost.de |
| sitelutions.com | spdyn.de [6] (spdns.de) | strato.com | system-ns.com |
| thatip.com | twodns.de | variomedia.de [6] | zerigo.com [6] |
| zoneedit.com [5] | zzzz.io [5] [6] | | BIND nsupdate [3] [4] [6] |

[1] requires additional package *ddns-scripts_no-ip_com* to be installed.
[2] needs additional package *ddns-scripts_cloudflare* to be installed.
[3] directly updates a PowerDNS (or maybe bind server) via nsupdate.
[4] needs additional package *ddns-scripts_nsupdate* and `bind-client` to be installed.
[5] SSL support required.
[6] support IPv6

You can refer to the link below for more information:

https://openwrt.org/docs/guide-user/services/ddns/client

For the purpose of this document we will be using the DDNS service provider dyndnss.net.

## 2.2 Register your DYNDNS account

Go to dyndnss.net you will see the website in Figure 1. Click on *Register* to create account:

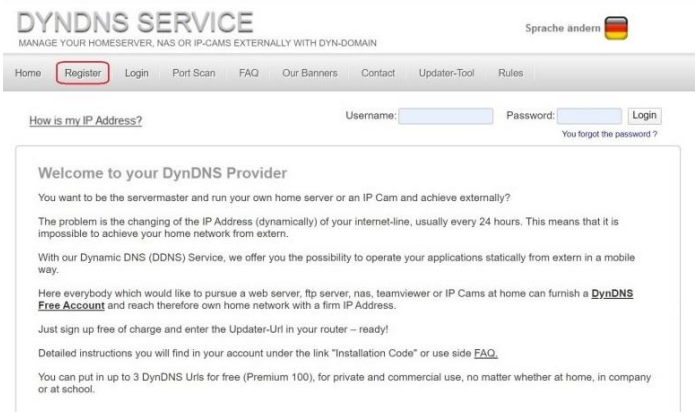


*Figure 1 | Register DYNDNS Account*

Fill in your names, e-mail, user name and password. Agree with the terms and click *Create a Free Account.*


*Figure 2 | Create a Free Account*

You will receive e-mail with a link that you have to open to confirm your account. This will bring you to the login page.

## 2.3 Created a DynDNS Url

Once you are logged in click on the *Creating a new DynDNS Url* link shown in Figure 3.

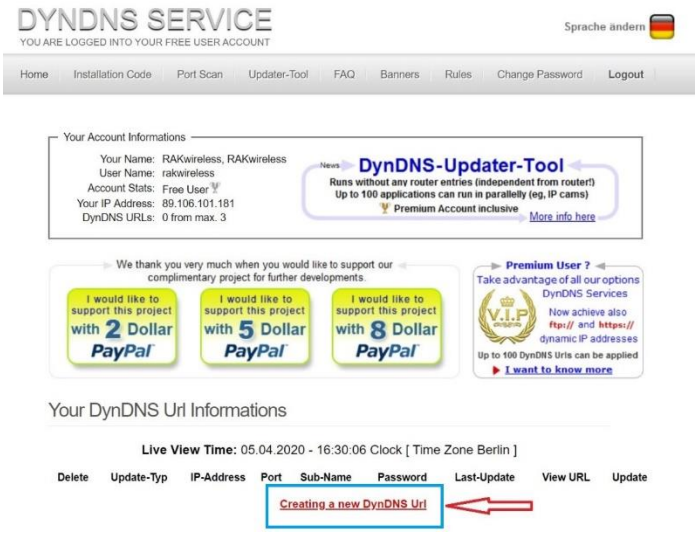


*Figure 3 | Create DynDNS URL*

Input a *Sub-Name* for your domain. This will be the one you use for accessing the Gateway later when we are finished configuring the service. Leave the *Port* field empty. For example we are going to be using *rakwireless.dyndnss.net*.

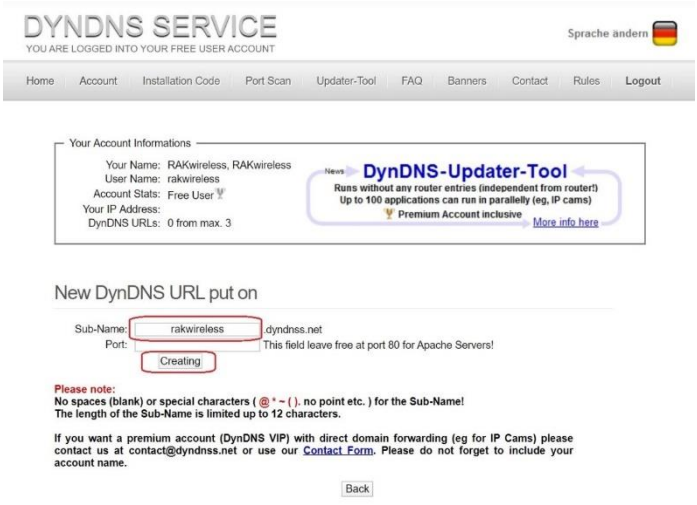


*Figure 4 | Create Subdomain Name*

The DDNS URL is created. You should now have a password that we will need to setup the Gateway DDNS Service, full DDNS URL and “ENTER” button that will force the DynDNSS service to get the Gateway current IP.


*Figure 5 | DynDNS Url Information*

## 2.4 Setting the DDNS Service in the Gateway

Log into the Gateway Web UI. Choose the Services → Dynamic DNS (Beta) menu.

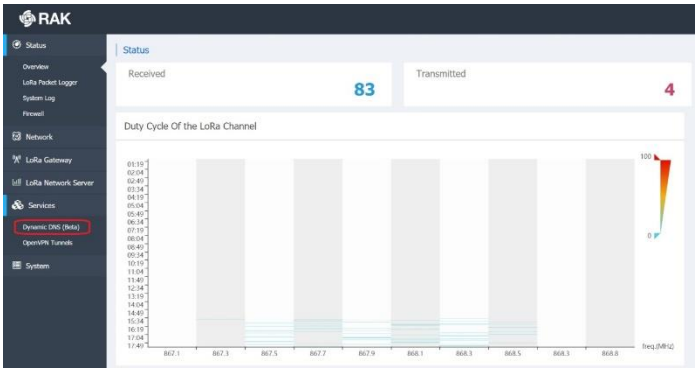


*Figure 6 | RAK Gateway Web UI*

In the Dynamic DNS page, input a name for the service in the text box and click the "Add" button.

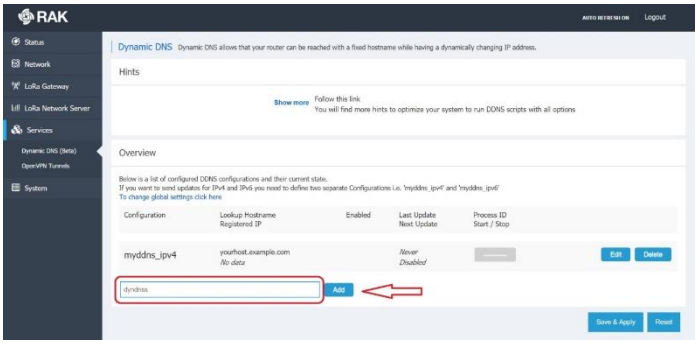


*Figure 7 | Create a DDNS Service*

In the Dynamic DNS configuration page, *enable* the service. Next fill in the *Lookup Hostname* with "*dyndnss.net*" and choose dyndnss.net from the drop-down list for the *DDNS Service provider*. Fill in the *Hostname/Domain* with the one we created earlier (Figure 4), your Username for DynDNSS and the Password (Figure 5).

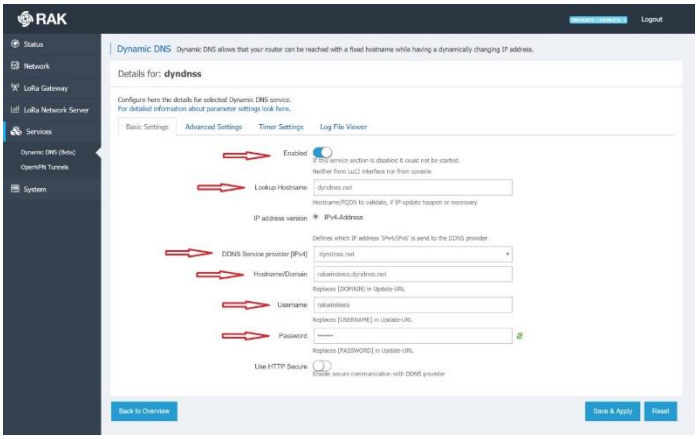


*Figure 8 | DDNS Basic Settings Configuration*

Open the Advanced Settings tab.

The default *IP Address source* is Network and the default *Network* is WAN. This mean that the DDNS Service of the Gateway will check and report to dyndnss.net the WAN IP of the Gateway. If you want to access your Gateway trough different backhaul you can choose it here.

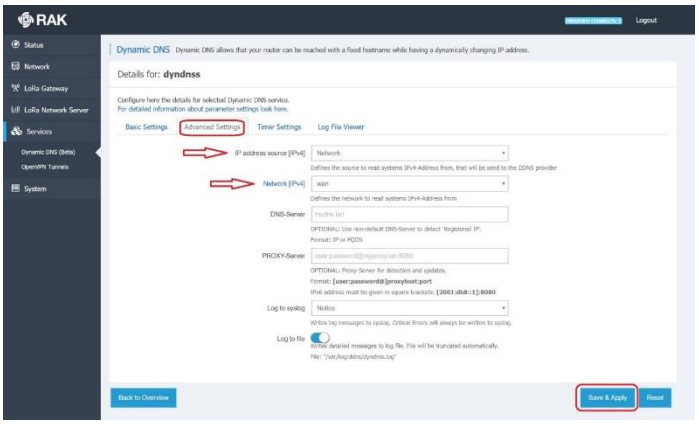


*Figure 9 | DDNS Advanced Settings Configuration*

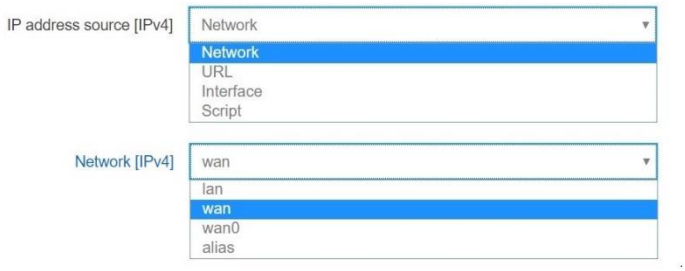


*Figure 10 | Network Interface Options*

Click Save & Apply.

After the configuration is saved, you will be redirected to the main Dynamic DNS page.

To start the Dynamic DNS Service, click the “Start” button. This is the page where you can see the dyndnss.net IP, which is the IP address that the Gateway reports any change in the IP address you chose in Figure 9.

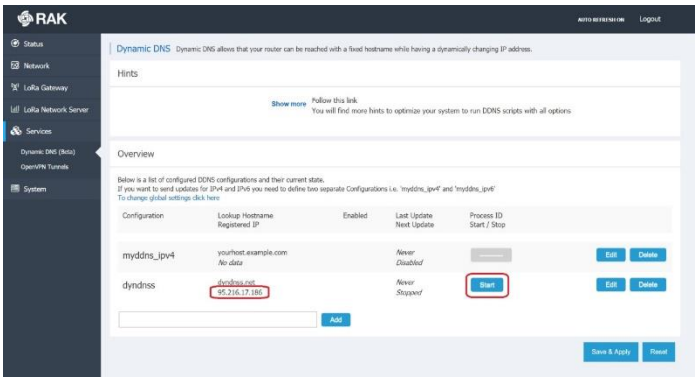


*Figure 11 | Starting the DDNS Service in the Gateway*

Go back to the dyndnss.net web page and click on the “ENTER” button.


*Figure 12 | Updating the Real IP Address*

If your setup was correct, you will see a confirmation screen with your Real IP.

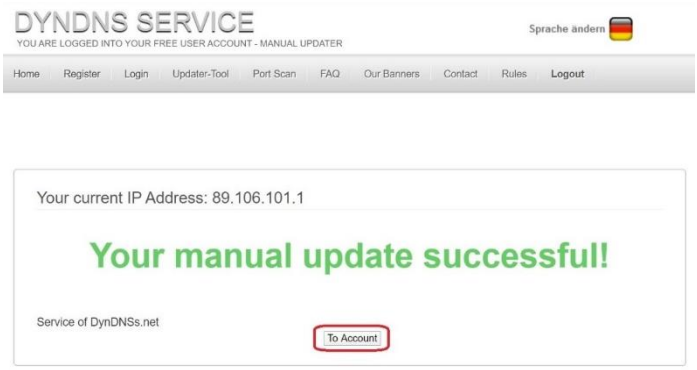


*Figure 13 | DynDNS Confirmation Screen*

Click the “To Account” button to turn back to the DynDNS Url Information page.

Now we can see the assigned IP address and the last time that was updated.


*Figure 14 | DynDNS Updated IP*

Now if you open the URL from a Web Browser, you will see the RAK Gateway login page. You can access your Gateway from anywhere using this URL.

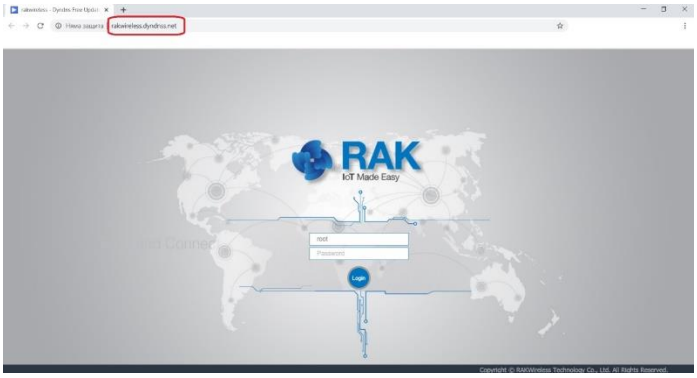


*Figure 15 | RAK Gateway Remote Access From URL*

This concludes the tutorial.

About RAKwireless:

RAKwireless is the pioneer in providing innovative and diverse cellular and LoRa® connectivity solutions for IoT edge devices. It's easy and modular design can be used in different IoT applications and accelerate time-to-market.

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