How to Use Dynamic DNS with ACTi Cameras

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Introduction

There are surveillance solutions that consist of single cameras scattered over a wide territory, therefore each of those cameras should be connected to Internet in order to become accessible by Control Center. For example, the chain stores, bus stops, currency exchange booths, etc.

In such cases, one of the practical networking solutions is to use DSL modem on camera site and let the camera obtain the dynamic IP address from the Internet Service Provider through the DSL modem using PPPoE connection, which is much more cost-effective than applying for static IP address.

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However, there is one drawback in this solution – in order to do the remote surveillance from the Control Center, the NVR Server in the Control Center has to know the address of the IP camera at all times in order to get the video stream from the camera. If the camera’s network connection has been reset for any reason, the camera will get a new IP address through DSL Modem, which may be different from the previous one. NVR will not know about this change, and the connection between the camera and NVR will fail.
The good news is - there exists a solution that makes sure the NVR can find the camera even if the camera IP changes frequently. ACTi cameras support **Dynamic DNS** service that allows frequently changing IP be mapped to a certain unchangeable domain name. The mapping database and its updating engine are hosted in one of the Dynamic DNS servers, most of which offer basic services for free, such as [www.dyndns.org](http://www.dyndns.org).

How does it work? Look at the graph below.

Every time the IP camera gets an IP that is different from previous one, it notifies the public DDNS Service about the change. The DDNS Service updates its database immediately, mapping the assigned domain name (for example `tcm7411.dyndns.org`) to the new IP address.

In NVR settings, only the domain name (`tcm7411.dyndns.org`) is used to identify the camera. Every time when NVR needs to connect to the camera, it asks from DDNS Service what the current camera’s IP is. The DDNS Service instantly responds to NVR and tells it the camera’s IP. Now NVR will use the IP of the camera to connect to the camera and the video stream from the camera to NVR can be initiated.

As a result, NVR can always find the IP camera regardless of frequently changing IP address of the camera. Since there are so many public DDNS Services available for free, the PPPoE-based connection is really a good and low-cost solution for single-camera sites.

Although the theoretical explanation might be clear by now, you might still want to know the step-by-step procedure of how to set up the PPPoE together with DDNS support.
How to Set Up DDNS

Create a user account at DDNS service provider

Enter the www.dyndns.org and press “Create Account”. It will be automatically redirected to www.dyndns.com

Input the registration information and press “Create Account”.

Username: [username]
Password: [password]
Confirm password: [password]
Email: [email]
Confirm email: [email]

Security Image:

Enter the numbers from the above image: 6714

By agreeing with the acceptable use policy (AUP) and privacy policy, click “Create Account”.

The account has been created and e-mail will be sent to your mailbox, waiting for user confirmation.

Open your mailbox and find the e-mail sent by Dyndns.org. By clicking on the link provided in the e-mail, the account will be activated.

As a result, the account activation has been completed.
Go back to the DynDNS main page, and log in with the new account.

Enter the “My Hosts” page.

There are no hosts listed yet, so click on the “Add New Host” button.
Think of a domain name that you want your camera to be identified with. In this example, I chose “tcm7411.dyndns.org”. You also have to fill the IP Address field. You can type your current PC’s IP address there. Don’t worry - it will later change automatically once the camera is connected to Internet. After that, press “Add To Cart”.

Press “Next” to check out. It is a free service, so there is no transaction involved.
Press “Activate Services” to let this new domain be active in DDNS database.

The service has been activated. Although the IP listed there is not the camera’s IP yet, it will change instantly later when you connect the camera to Internet.

The DDNS account setup and activation is complete. You may close the website.

Now connect the camera to your local network and find it by using the IP-Utility. The IP-Utility tool can be downloaded from ACTi website. In this example, the device that I am looking for (TCM-7411) is listed there with the IP 10.1.1.25. Click on it in order to launch the Web Configurator. The Web Configurator access is needed for setting up the DDNS and PPPoE in camera.
Log in to Web Configurator of the camera with the administrator's account.

Upon successful login, you will see the live preview from the camera. Press “Setup”.

Go to NETWORK, DDNS page. Set DDNS type to be enabled, service ISP to “members.dyndns.org”, set host name to the domain name you registered at DDNS website and fill user name and password of DDNS service that you registered above. Press “Apply”.
Go to NETWORK, Connection Type page. Set the connection type to PPPoE and input the User Name and Password provided by your Internet Service Provider for accessing Internet through DSL modem.

After these changes, remember to **reboot** the camera. Go to Maintain, Save & Reboot, and press Apply.

Now take the camera to the site where the DSL modem has been set up. Connect the camera with the DSL modem and power the camera up. After that, go and open the DynDNS website again and login to see the Service status. You may notice, the IP there has already been updated because the camera already contacted the DynDNS through the DSL modem.
Before testing how domain name works, you can first try if you are able to connect the camera by the updated IP address (114.24.59.72) that you saw in DynDNS service page. As you can see, the Web Configurator was successfully loaded.

Now, you can try how the domain name works. Input the DDNS domain name of the camera into the Internet Explorer browser and you will be able to access Web Configurator.

How does it work? When you input the DDNS domain name into browser’s address bar, the address resolving request will be sent to DynDNS DDNS server. DynDNS will respond by telling the current IP of the device that matches with the given domain name. The browser will be able to connect to the Web Configurator by this IP. The user will not even notice how this system works efficiently in the background.
The login by using the DDNS domain name was successful. The live preview works well.

Now, let's move on to the actual purpose of using the DDNS – it is to **add the camera into NVR system by using camera's DDNS domain name instead of IP address.**

Open the **ActiveSetup** of the NVR and in the “Add New Camera” page choose “Manual” mode and press “Next Step”.
In the channel settings page, you can input the DDNS domain name of the camera, select the camera Model and Production ID. After that you can already test whether it is possible to get live preview or not. Press “Get Device Setting”. As you see below, the live preview comes through successfully. To save the changes, press Apply.

The live preview in ActiveMonitor of NVR works well. Thank you for reading!