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Flexitron group

TITAN

Application Note 54

Sending Data via 3G/4G when Ethernet or Wi-Fi Communication Fails, using Failover

Sending Data via 3G/4G when Ethernet or Wi-Fi Communication Fails, using Failover

1. Scenario Details

TITAN-based devices have all the typical functionalities of 4G/3G/2G routers, as well as a series of added features that make them one of the most feature-packed routers on the market.

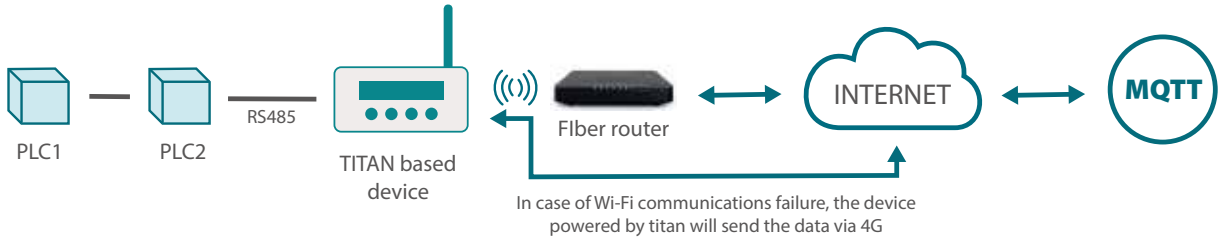
One of the most relevant added features is the ability to act as a concentrator of data from sensors (Modbus, temperature, distance, etc.).

The data collected, as is evident, must be sent to a server for processing. TITAN-based devices have several options to achieve this, the data can be sent via HTTP/HTTPS, MQTT/MQTTS and FTP. A range of application notes are available explaining how to configure the TITAN-based device to collect and send data.

However, in most of the application notes, the device is configured to send the data to a server through its 4G/3G/2G interface, as this is the most commonly used method. However, the TITAN-based device can also be configured to send data via Ethernet and Wi-Fi interfaces, only using 4G/3G/2G communications when the primary interface (Ethernet or WiFi) fails.

This Application Note will explain the failover functionality using the following example:

- Two Modbus RTU devices must be read on a period basis. The devices will be interrogated every 10 minutes and the Modbus register readings sent to a remote server (MQTT broker).



- The TITAN-based device must be connected as a Wi-Fi client to an existing router (Wi-Fi Access Point) which provides Internet connectivity.
- The TITAN-based device must send the data to the MQTT broker using the existing Wi-Fi connection. If the Wi-Fi connection fails (failure of the Wi-Fi Access Point or Internet connectivity problems) the TITAN-based device must activate its 4G/3G/2G WAN interface and send the data to the remote server through it.
- When Wi-Fi connectivity is restored, the TITAN-based device must disable the 4G/3G/2G WAN interface and send data via the Wi-Fi interface again.

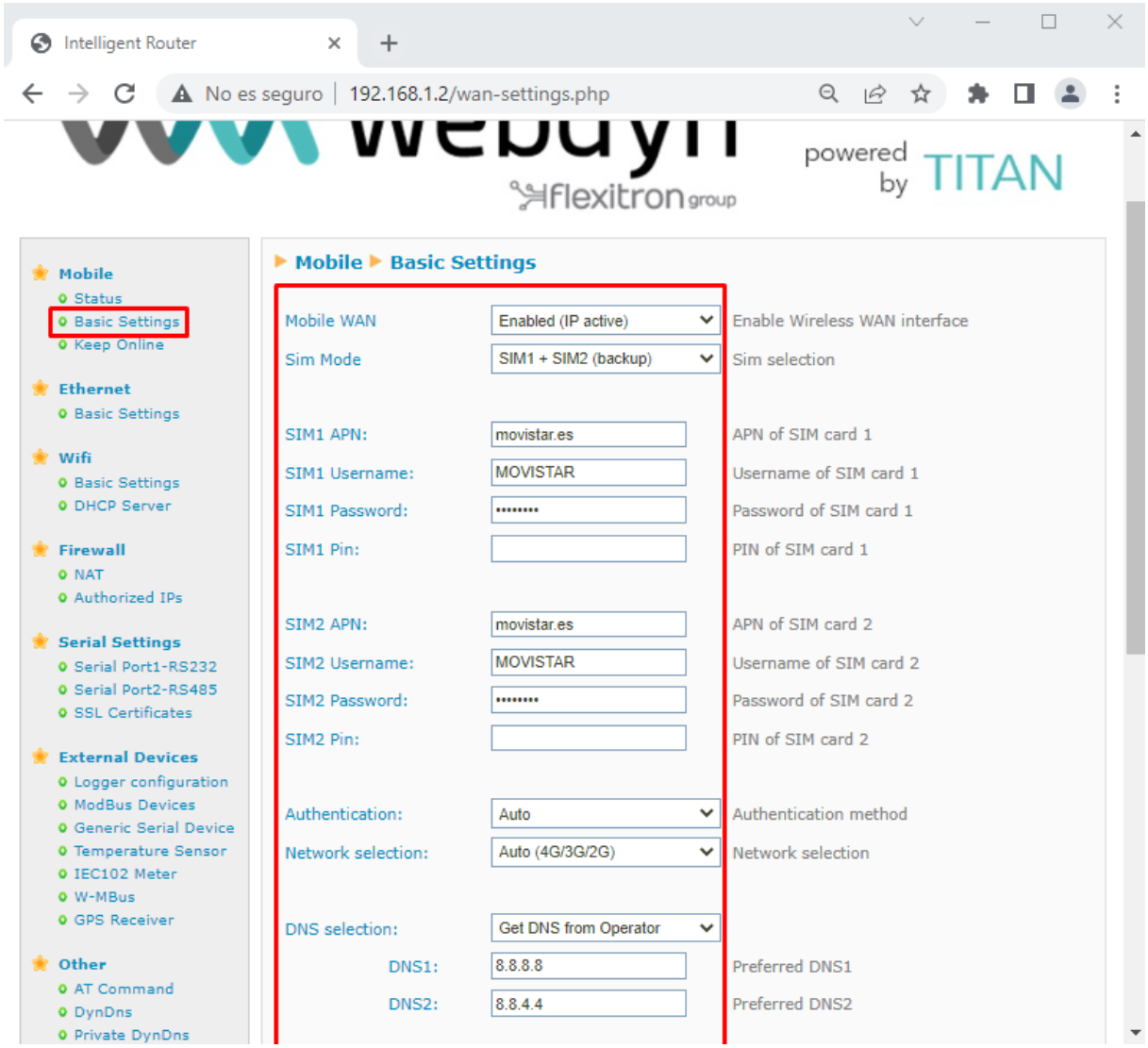
NB: This Application Note does NOT cover the configuration required to read Modbus devices. Please see Application Note ANV6-32 for this. This Application Note continues on from ANV6-32, only covers the configuration required to use a Wi-Fi connection as the primary interface, and 4G/3G/2G if communications fail.

2. Configuring 4G/3G/2G WAN Communications in the TITAN-based Device

First we must configure the WAN communications (4G/3G/2G). Go to the “Mobile > Basic Settings” menu and configure it as required, activate WAN (enabled) and enter the data for the SIM card, including the PIN (if there is one), the APN, the USERNAME and the PASSWORD.

We must also specify DNS1 and DNS2 as we will need to select the “Selected DNS Servers (also used for failover if enabled)” option if we need to use the failover feature.

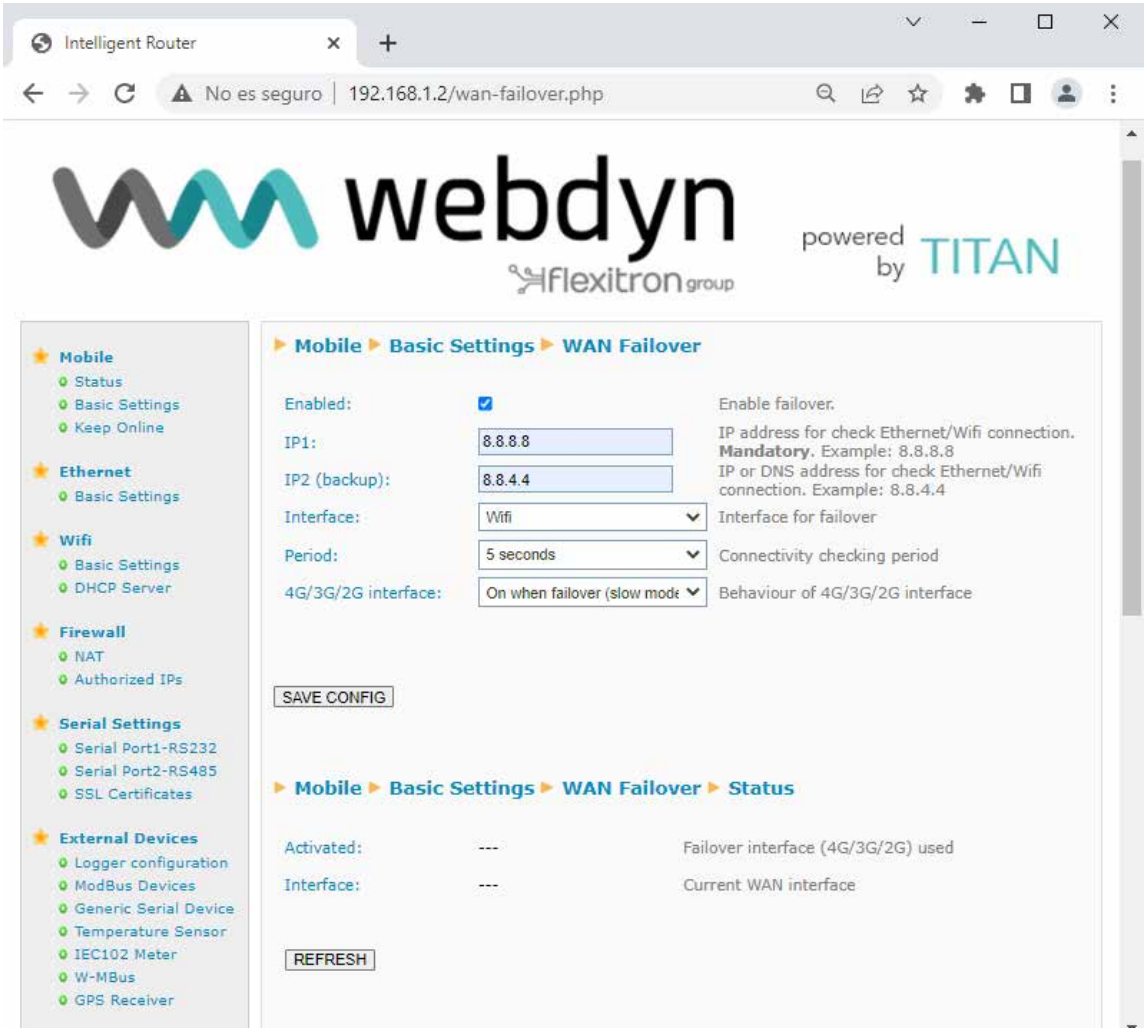
After entering the data, click on “SAVE CONFIG” to save the configuration in the device's memory. The following screenshot shows an example.



3. Configuring the Device's "Failover" Characteristics

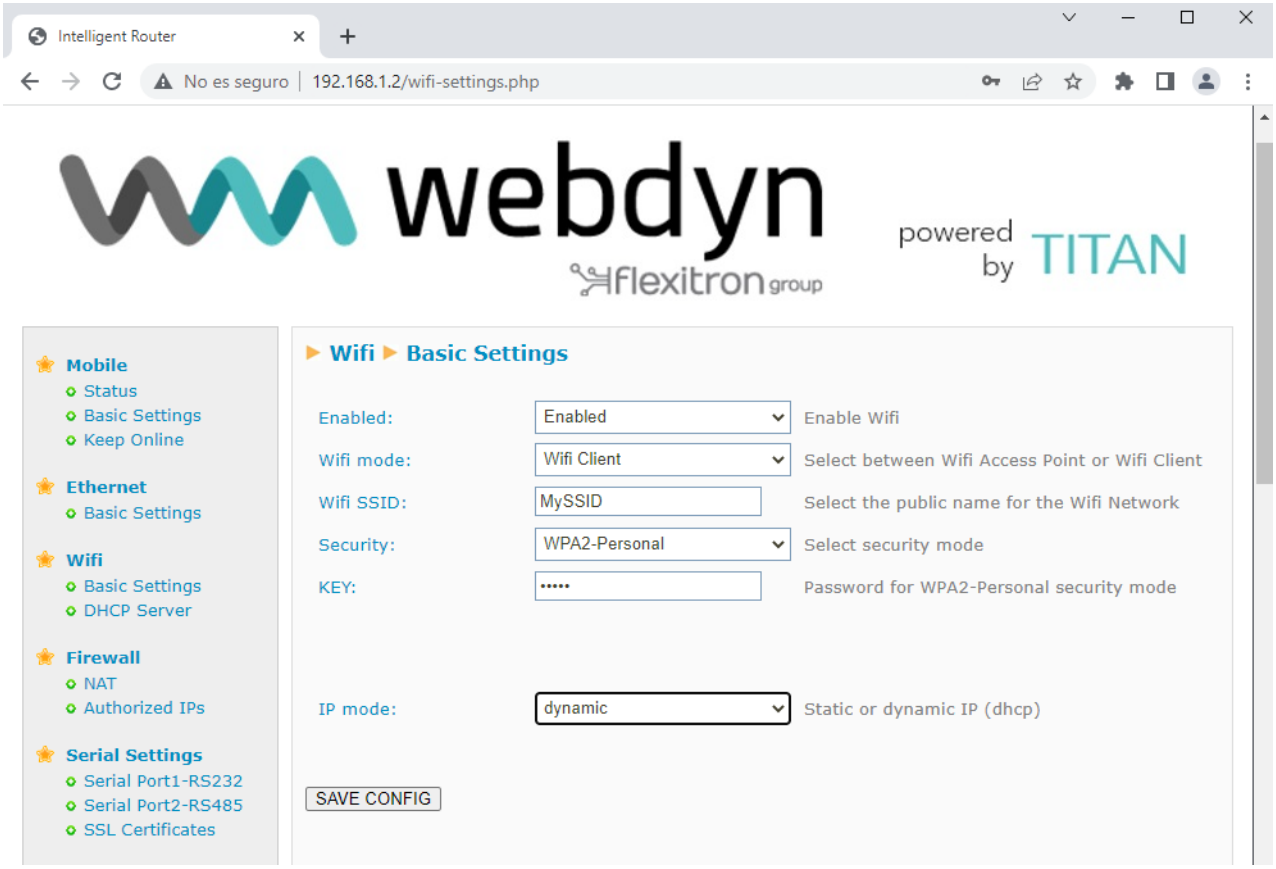
Click on the "Failover config" button at the bottom of the same configuration screen.

In the "Failover" section, the "Enabled" option must be enabled and 2 IP addresses entered which the TITAN-based device will periodically "ping" via the WiFi interface to check connectivity. In this example, the well-known Google IPs 8.8.8.8 and 8.8.4.4 will be used. The "ping" interval will be 5 seconds, we can only activate the 4G/3G/2G WAN interface when Wi-Fi communications fail.



4. Configuring the Wi-Fi Interface

The Wi-Fi section will now be configured and the TITAN-based device configured to be a WiFi client. Go to the “Wi-Fi > Basic Settings” menu.



In this section we must activate the interface (enabled), select the Wi-Fi Client option and specify the AP to which we want the TITAN-based device to connect (in this case an SSID named MySSID).

Click on “SAVE CONFIG” and restart the TITAN-based device. Once rebooted, the new settings will take effect.