

# Application Note: Setting up Serial Interfaces

## I. Dual RS232 interfaces

Here you can find some information I sent the customer that explains how to configure the serial framework to work with

- Single Serial Card RS232
- Industrial RS485 and RS232 Card
- Dual Serial Card RS232-1 and RS232-2

The new version of the serial framework (version 88.9) allowed for configuring both the RS232 and RS485 ports without the need of changing any configuration manually.

**Note: You will actually need to use either version 0.90.2 or version 0.90.3 to be able to work with the latest firmware.**

How to use the tool:

1. Upload the SerialFramework 90.3 zip file using the provisioning server tab the same way you load all dev image files.
2. Reboot the device once the SerialFramework is uploaded.
3. Once the device is back, go to the Plugin> SerialFramework page remove all the configurations you had (if it still exists). Save the changes. This is just to start from a clean configuration.
4. Now go ahead and add a new scenario called **Serial port to local TCP server**. This is basically the same scenario as before (RS232 to local TCP server), but now it was made generic so that it can support both serial interfaces (not at the same time on the same configuration, but you can add multiple configurations on different ports).
5. Let's do the configuration for the RS232 interface first: **Notice that the Serial port can actually take two values now: /dev/ttySP0 (RS232) or /dev/ttySP4 (RS485). On the new dual serial card, both will be RS232, it is just the name of the scenario that can be misleading.**

### Serial port to local TCP server 1 [▲Top](#)

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TCP Server Parameters

IP Port

Inactivity timeout  In milliseconds, 0 means never timeout.

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Serial Parameters

Serial Port

Baud rate

Stop bits  1  
 2

Parity  None  
 Even  
 Odd

Data bits  5  
 6  
 7  
 8

Flow control  None  
 XON/XOFF  
 RTS/CTS

6. Remember that the firewall rule should match this configuration:

### Inbound port forwarding

Protocol	Inbound interface	Source IP	Dest. port	Target IP : port	Actions
TCP	ALL	Any	4000	192.168.1.1:4000	<input type="button" value="✎"/> <input type="button" value="🗑"/>
<input type="button" value="➕ Add"/>					

7. Now, let's add a second **Serial port to local TCP server**, but now we need to change a couple of things:

- ü The TCP port (it has to be different than 4000, since that port is being use by the first scenario – I would probably also make it different than 5000 since that is the port for the manual configuration. Let's make it **4001**)

- ü The Serial interface (Select the **RS485** interface from the dropdown menu)  
**Note:On dual serial card it will be the other RS232 interface**

- ü The configuration of the serial interface according to your needs

Serial port to local TCP server 2 [Top](#)

TCP Server Parameters

IP Port

Inactivity timeout  In milliseconds, 0 means never timeout.

Serial Parameters

Serial Port

Baud rate

Stop bits  1  2

Parity  None  Even  Odd

Data bits  5  6  7  8

Flow control  None  XON/XOFF  RTS/CTS

8. Now we need to add a new firewall rule for this scenario:

## Inbound port forwarding

Protocol	Inbound interface	Source IP	Dest. port	Target IP : port	Actions
TCP	ALL	Any	4000	192.168.1.1:4000	 
TCP	ALL	Any	4001	192.168.1.1:4001	 

 Add

9. Save all changes. The idea is that you will be able to contact the RS232 port on the TCP port 4000 and the RS485 port on the TCP port 4001.

## II. USB/Dropbox

Regarding this topic, the only thing we did was mount a USB drive connected into the USB port and copy some files from the CloudGate to the drive. The steps were:

1. Connect the USB drive into the USB port
2. Create a folder that will be used to mount the drive on: ***mkdir /tmp/mem***
3. Mount the drive to the folder: ***mount /dev/sda1 /tmp/mem***

Those steps will allow you to access the drive to read/write files. When you want to remove the drive you need to execute: ***umount /tmp/mem***

Now, for the Dropbox part, the only thing I did was looking into the internet to see if someone else has done any tool that can do upload and download of data to Dropbox and I found the following:

<http://openwrtindonesia.blogspot.com.br/2013/09/openwrt-dropbox-client.html>

[http://www.andreafabrizi.it/?dropbox\\_uploader](http://www.andreafabrizi.it/?dropbox_uploader)

The other way is to use the Dropbox API to write a code that can do it, but since someone else have done it before, you could just use it. Not sure how much work will that be.

Best regards,

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