



ip.buffer App Note
AN005 : Legacy Emulation



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1. Introduction

The ip.buffer firmware version 2.10 introduced the ability to emulate legacy buffers through Lua scripting. The ip.buffer is not shipped with the emulation installed, so this document describes how to setup the emulation.

Before proceeding, make sure you have the following:

- Firmware v2.10, or above, installed in the ip.buffer
- The emulation Lua script you require
 - Scripts are available on request by email.
 - (They are not downloadable from the web-site)

2. Installing the Script

The script is just a (large) Lua script. There are two ways to install the script into the target ip.buffer:

2.1. *When you have no other script*

If you have no other script requirements you can upload directly into the ip.buffer through the web-page.

- Access the ip.buffer web-page
- Click on the “SETUP” link at the top of the page
 - The default authorization credentials are:
 - Username = “admin”
 - Password = “secret”
- At the bottom of the page, click on the “Advanced: Configuration, Scripts, Upgrade...”
 - The “Setup: Advanced” web-page should appear
- Click on the link “Script: Upload”
 - A web-page with a filename box should appear.
 - Click on the “Browse...” button
 - Locate the Lua emulation script and double click it

Note: Only upload the script file that has a “.lua” extension!
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- (The full path and name should appear in the edit box)
- Click on the “SAVE” button
- You should see the message “Script Updated!”
 - Click on the “NOW” link to reboot Lua immediately.
- After a couple of seconds you should see the ip.buffer status screen.
 - If there is a problem with the script, you will see a red banner at the top of the web-page showing the nature of the error.

2.2. *When you have other script requirements*

If you have other script requirements, such as filtering, alarm detection etc, then you need to combine the emulation script with the other script snippets.

You can either edit the script through the web page and copy-and-paste the emulation script in, or create a combined file that you upload as above.

It is preferable to create a combined file.

3. Setting up Legacy Emulation

Once the Lua script has been installed you can connect a channel's delivery mechanism to use the emulation.

For example, if you want Channel 1 to work in legacy emulation mode:

- From the Status web-page, click on Channel 1's "Destination" box.
- When you see the drop down menu that is labelled "Destination", select the option "Legacy Emulation (TCP Server)"
- Fill in the appropriate values for legacy emulation:
 - Port = 23 This is the standard Telnet port. However, you can use any unused port¹
 - Interface = "LAN, Modem (PPP & Legacy)" This allows all connection options. Other choices are:
 - "LAN Only" - you can only Telnet into the ip.buffer across the Ethernet. If you try to dial into the ip.buffer modem you will not be able to use the legacy emulation.
 - "Modem Only" - you can only dial into the ip.buffer using a PPP link, and you will then have to use a Telnet TCP/IP client across the PPP link to use the legacy emulation.
 - "LAN, Modem (PPP & Legacy)" - you can connect across the LAN, or you can dial in with PPP and connect with TCP/IP, or you can dial with a dumb terminal (like Hyperterminal) and gain character-based access to the legacy emulation².
 - Allow = ""
 - Leave this blank until everything is working.
 - Enter "127.0.0.1" to restrict access to the legacy "dumb" modem dial in (the Interface must be set to "LAN, Modem (PPP & Legacy)").
 - Enter a dotted IP address, or name, to restrict LAN access. (the Interface must be set to "LAN Only")
 - TLS/SSL = "No encryption". To emulate legacy devices, keep this at "No encryption".
 - Client Type:
 - "Auto" - the ip.buffer will wait for a Telnet command from the client. If the client issues Telnet commands when it connects, then the ip.buffer will negotiate appropriate options.

¹ If, for example, you want an ip.4 to emulate four different legacy buffers you will need to set each channel to use a different port number. Your client software will need to be programmed to talk to the appropriate port number(s).

² The ip.buffer "loops-back" the modem connection to talk to the first channel that is set for legacy emulation.

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- “Telnet” - the ip.buffer will send Telnet options to the client as soon as it connects. However, this mode will provide the most compatibility with manual Telnet command tools (Windows and Linux), but may prevent the legacy dial-in modem and custom written clients from working properly when using binary transfers³.
 - “Raw TCP/IP” - the ip.buffer will not do any Telnet negotiations. The socket will be treated as a basic TCP socket.
 - To support the legacy dial-in modem you should use “Auto” or “Raw TCP/IP”
- Click “SAVE” to make the changes permanent.

The channel that is using emulation will show up as “Emulation” on the destination status cell.

³ Telnet requires that the 0xff character be escaped as 0xff 0xff. The client needs to know how to deal with this!