# **≡**scannexIII

# ip.buffer App Note AN001 : Dialling into the ip.buffer



Date	Author	Release
2007-10-02	MP	Initial draft
2008-06-11	MP	Updated for auto-IP

© UK 2007-8 Scannex Electronics Limited. All rights reserved worldwide.

Scannex Electronics Ltd, UK t: +44(0)8707 48 65 65 f: +44(0)8707 48 67 67

http://www.scannex.co.uk info@scannex.co.uk Scannex LLC, USA t: 1-866-4BUFFER (1-866-428-3337)

http://www.scannex.com info@scannex.com

1. Introduction	.1
2. Setting up the ip.buffer	.2
2.1. Modem: Global	.2
2.1.1. Country	.2
2.1.2. Initialisation	.2
2.1.3. Default IP	.2
2.2. Modem: Dial-in	.2
3. Setting up the PC	.3
3.1. Windows XP	.3
3.1.1. Create the connection	.3
3.1.2. Adjusting the connection properties	.6
4. Manually Dialling the ip.buffer	11
5. Accessing the ip.buffer	12
5.1. ip.buffer web-page	12
5.2. Accessing FTP	12
6. Automating the dial-out	13
6.1. Using command line tools	13
6.1.1. Connecting	13
6.1.2. Disconnecting	13
6.2. Dialling from Software	14

#### Table of Contents

# 1. Introduction

All ip.buffer products with an "m" suffix (e.g. ip.4-128m) have an internal modem that supports both dial-in and dial-out features.

Contrary to older buffer products, the ip.buffer uses the TCP/IP protocols exclusively and therefore uses the PPP (Point-to-Point Protocol) over the modem. This allows for greater long-term flexibility and the ability to leverage the global Internet for delivering stored data.

This application note will explain how to dial into the ip.buffer modem.

The dial-in access allows for administration of the ip.buffer (via the web-server) and for collection of data with any of the "pull" methods (FTP server, or TCP server). This approach for data collection allows great flexibility in collecting from multiple ip.buffers.

# 2. Setting up the ip.buffer

Initially you can connect the ip.buffer to your Ethernet LAN and use the Scannex "SEDiscover" application to locate the ip.buffer and program its IP address. From there you can use a web-browser to access the configuration pages. (See the main ip.buffer manual for more details.)

The modem options are available from the web-page.

- Click on "SETUP" at the top of the web page
- In the "Global" section, choose the link for "Settings"
- In the page that loads, click on the "show" that is next to "Modem In"

### 2.1. Modem In: Global

#### 2.1.1. Country

The country code sets up the modem for use in a specific country.

B5 is the default, which is for the US, and will work in most other areas. The ip.buffer manual has a full list of Multitech country codes.

#### 2.1.2. Initialisation

The initialisation string is used for forcing other modes in the modem. *Leave this blank*.

#### 2.1.3. ip.buffer Address

When you dial into the ip.buffer it will require an IP address that corresponds to the modem/PPP link. This field defaults to a blank value - the ip.buffer will assume the next IP address from the PC that dials in.

You can also force a fixed address. e.g. 192.168.234.235.

This address ideally should not exist on your LAN (or in the routing table for your PC). Generally the address range 192.168.0.x are used for LAN connections and it is very unlikely that the .234.x range will be used.

## 2.2. Modem: Dial-in

The dial-in settings need to be configured as well. Leave the settings as they are until you are confident that your PC is communicating with the ip.buffer.

• When you are happy that everything is working, be sure to change the username and password so that others cannot attempt to dial in to the ip.buffer!

# 3. Setting up the PC

• Even if you have many ip.buffers to communicate with, you only need **one** connection on the PC. It is not necessary to make a separate connection for each remote site.

### 3.1. Windows XP

#### 3.1.1. Create the connection

- Start up the Control Panel
- Select "Network Connections"
- Select the task "New Connection Wizard", click Next

New Connection Wizard		
<b>S</b>	Welcome to the New Connection Wizard	
	This wizard helps you:	
	Connect to the Internet.	
	<ul> <li>Connect to a private network, such as your workplace network.</li> </ul>	
	<ul> <li>Set up a home or small office network.</li> </ul>	
	To continue, click Next.	
	< <u>B</u> ack <u>N</u> ext > Cancel	

- Click "Next"
- Select "Connect to the network at my workplace"

w	Connection Wizard
Ne	etwork Connection Type
	What do you want to do?
	O <u>C</u> onnect to the Internet
	Connect to the Internet so you can browse the Web and read email.
	Connect to the network at my workplace
	Connect to a business network (using dial-up or VPN) so you can work from home, a field office, or another location.
	O Set up a home or small office network
	Connect to an existing home or small office network or set up a new one.
	○ Set up an advanced connection
	Connect directly to another computer using your serial, parallel, or infrared port, or set up this computer so that other computers can connect to it.
	< <u>B</u> ack <u>N</u> ext > Cancel
	Click "Next"
	Select "Dial-up connection"
	Connection Wizzed
Ne	etwork Connection How do you want to connect to the network at your workplace?
	Create the following connection:
Utal-up connection Connect using a modem and a regular phone line or an Integrated Services Digital Network (ISDN) phone line.	
	O Virtual Private Network connection
	Connect to the network using a virtual private network (VPN) connection over the Internet.
	Consol

Click "Next" •

• Type in the connection name, e.g. "ip.buffer"

New Connection Wizard
Connection Name Specify a name for this connection to your workplace.
Type a name for this connection in the following box.
Company N <u>a</u> me
ip.buffer
For example, you could type the name of your workplace or the name of a server you will connect to.
< <u>B</u> ack <u>N</u> ext > Cancel

- Click "Next"
- Enter the phone number, e.g. "1234"

New Connection Wizard
Phone Number to Dial What is the phone number you will use to make this connection?
Type the phone number below. <u>P</u> hone number:
1234
You might need to include a "1" or the area code, or both. If you are not sure you need the extra numbers, dial the phone number on your telephone. If you hear a modem sound, the number dialed is correct.
< <u>B</u> ack <u>N</u> ext > Cancel

- Click "Next"
- Click Finish

#### **3.1.2.** Adjusting the connection properties

The "Connect ip.buffer" dialog will appear after completing the previous step. Press the "Properties" button.

• If it does not, right click on the "ip.buffer" icon in the Network Connections explorer view and select "Properties".

ip.buffer Properties
General Options Security Networking Advanced
Connect using:
Modem - Intel(R) 537EP V9x DF PCI Modem (COM3)
Configure
Phone number
Area code: Phone number:
1234 Alternates
Country/region code:
✓
Use dialing rules Dialing Bules
Show icon in notification area when connected
OK Cancel

 $\circ~$  On the "Options" tab page, ensure "Redial if line is dropped" is not checked.

🖢 ip.buffer Properties	2 🔀
General Options Security Networking	Advanced
Dialing options         ✓ Display progress while connecting         ✓ Prompt for name and password, cer         ☐ Include Windows logon domain	rtificate, etc.
Prompt for phone <u>n</u> umber	
Redialing options	3
Time between redial attempts:	
Idle time before hanging up:	never 🗸
Redial if line is dropped	
<u>X.25</u>	
	OK Cancel

• On the "Networking" tab page, select the "Internet Protocol (TCP/IP) is selected

💺 ip. buffer Properties 🔹 🔋 🖬
General Options Security Networking Advanced
Typ <u>e</u> of dial-up server I am calling:
PPP: Windows 95/98/NT4/2000, Internet
<u>S</u> ettings
This connection uses the following items:
🗹 🐨 Network Monitor Driver
🗹 🐨 Internet Protocol (TCP/IP)
QoS Packet Scheduler
🗹 📮 VMware Bridge Protocol 🛛 🕑
I <u>n</u> stall <u>U</u> ninstall P <u>r</u> operties
Description
Transmission Control Protocol/Internet Protocol. The default wide area network protocol that provides communication across diverse interconnected networks.
OK Cancel

• Press the Properties button (or double-click)

- Select the option "Use the following IP address" and enter an IP
  - e.g. 192.168.234.234
  - The ip.buffer will be set to the address programmed in the web-page (the default was 192.168.234.235), or the PC's address plus one.

Internet Protocol (TCP/IP) Properties	
General	
You can get IP settings assigned automatically i supports this capability. Otherwise, you need to administrator for the appropriate IP settings.	f your network ask your network
<ul> <li><u>O</u>btain an IP address automatically</li> </ul>	
O Use the following IP address:	
IP address: 192 .	168 . 234 . 234
<ul> <li>Obtain DNS server address automatically</li> <li>Use the following DNS server addresses: -</li> <li>Preferred DNS server: .</li> </ul>	
Alternate DNS server:	
	Ad <u>v</u> anced
[	OK Cancel

- Click the "Advanced" button
  - Untick the "Use default gateway on remote network"

Advanced TCP/IP Settings	2
General DNS WINS	
This checkbox only applies when you are connected to a local network and a dial-up network simultaneously. When checked, data that cannot be sent on the local network is forwarded to the dial-up network.	
Use default gateway on remote network	
PPP link Use IP header compression	
OK Car	ncel

- Click OK
- Click Ok to close the "Internet Protocol (TCP/IP) Properties"
- Click Ok on the "ip.buffer Properties" dialog

# 4. Manually Dialling the ip.buffer

From the "Network Connections" within Control Panel, just double click the "ip.buffer" connection.

Connect ip.buffer
User name: user
Password:
<ul> <li>Save this user name and password for the following users:</li> <li>Me only</li> <li>Anyone who uses this computer</li> </ul>
Djal: 1234
Dial Cancel Properties Help

Enter the user name and password that are programmed into the ip.buffer and click the "Dial" button.

When connected you should see an icon appear in the system task-tray showing the dial-up connection is connected.

# 5. Accessing the ip.buffer

## 5.1. ip.buffer web-page

Once connected via the modem/PPP link, you can simply access the ip.buffer from a web-browser.

In the example stated the address for the ip.buffer will be:

http://192.168.234.235

While connected you have the same access rights as when connected via the Ethernet LAN (just at a slower speed!).

## 5.2. Accessing FTP

You can use a simple tool, like the built-in command line FTP client to access the ip.buffer.

e.g. (from a COMMAND prompt) FTP 192.168.234.235

Alternatively, you can use your favourite FTP client (such as FileZilla) to access the ip.buffer. Again, use its IP address that was programmed in the Modem setup web-page.

# 6. Automating the dial-out

It is common for a PC to "reach-out" and collect from several remote sites. In this circumstance the dialling must be done without user intervention. There are at least two ways of automating the dial-out.

## 6.1. Using command line tools

Windows includes a "RASDIAL" command line tool that helps in creating batch command files for automation.

To get help on the RASDIAL command use:

RASDIAL /?

Further information on the RASDIAL command is available from Microsoft: http://www.microsoft.com/resources/documentation/windows/xp/all/proddocs/e n-us/rasdial.mspx?mfr=true

Assuming that the connection you created was called "ip.buffer" (as in the example) you can use the following commands to automate the dial-out process:

#### 6.1.1. Connecting

RASDIAL ip.buffer user password /PHONE:1234

Obviously, provide the correct telephone number for the remote site, and the required username and password (as setup in the ip.buffer itself).

If the connection was successful, the returned ERRORLEVEL will be 0 (zero).

#### 6.1.2. Disconnecting

The simple command:

```
RASDIAL ip.buffer /DISCONNECT
```

Will terminate the modem/PPP connection when your batch file is finished with the connection.

 If collecting from FTP, it is also possible to automate the FTP process with a script and batch file. See the Microsoft KB 96269 article: http://support.microsoft.com/kb/96269

## 6.2. Dialling from Software

It is also relatively simple to use C++, Delpi, or any other programming tool to perform the dialling using the Windows API calls.

Not surprisingly, the main API function is called "RasDial" (you can search for this under MSDN online).

The following information should be of help:

- RasEnumEntries will enumerate all the RAS connections. You can use this function to locate the "ip.buffer" entry created above and check that it's been created.
- Fill out a RASDialParams structure and fill in all fields:
  - $\circ$  Like all Windows API calls, you must set the dwSize field.
  - Copy the RAS connection name into the szEntryName field (e.g. "ip.buffer")
  - An szUserName string of "\*" will use the username programmed in the RAS connection entry. Any other value will override the connection entry's username.
  - The same applies to the szPassword string and the szPhoneNumber string entries.
- When calling the RasDial function you can supply a call back function which is called as the connection progresses.
  - $\circ~$  RasGetErrorString will convert the RAS error to a human readable string.
  - The RASCS\_xxx defines specify the connection state
- RasHangUp will terminate the connection (pass the handle returned from RasDial)

It is also possible to create the RAS connection programmatically (rather than having the user create the dial out entry).

See the online reference:

http://www.codeproject.com/internet/dialupsetup.asp for a sample project on creating dial-up connections.