NetPBX

Product Documentation

Last Updated: February 2016

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Legal & copyright notices

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One license covers one installation, although one installation may cover multiple sites.

Your support contract, if applicable, will cover all sites covered by this installation.

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```
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Technical Support: +44 20 7265 2626
Website: http://www.tri-line.com/
```

Free upgrades

We operate a free upgrade scheme for customers who purchase maintenance at the same time as purchasing a license; whilst a maintenance contract is in place**,** minor software updates and enhancements are made available free of charge.

Free upgrades are solely at the discretion of Tri-Line and are usually delivered by electronic means over the internet. It is the customer's responsibility to ensure that these updates can be received.

Customers without a maintenance contract will be charged for any software upgrades they require, as well as for any technical assistance needed during the upgrade procedure.

System requirements

Hardware

Any modern standalone PC will comfortably run a copy of NetPBX. The following specification are preferred:

- 2 GHz Dual-Core x86/x86-64 CPU
- 1 GB memory
- 40 GB hard disk
- Ethernet TCP/IP network
- Serial RS232-C where required by PBX

Software

NetPBX can be installed on any PC with a Microsoft Windows 2000 - Windows 7 (Server editions up to 2003).

A web browser is required to operate the software and, whilst any standards-compliant browser should be compatible, we have extensively tested the following ones:

- Microsoft Internet Explorer 6+
- Mozilla Firefox 2+
- Apple Safari
- Google Chrome
- Opera

What is NetPBX?

Overview

NetPBX is a stand-alone software utility that can be used to replace or extend the in-built data collection methods in our TIM Professional, TIM Plus and TIM Enterprise call logging products.

Its main purpose is to acquire call records from PBXs, routers and other telecom signalling equipment and send these across to a specified output location - the call logging software - using any of the following methods:

- Serial (RS232) connections
- Client socket connections
- Server socket connections

When and where you should use NetPBX

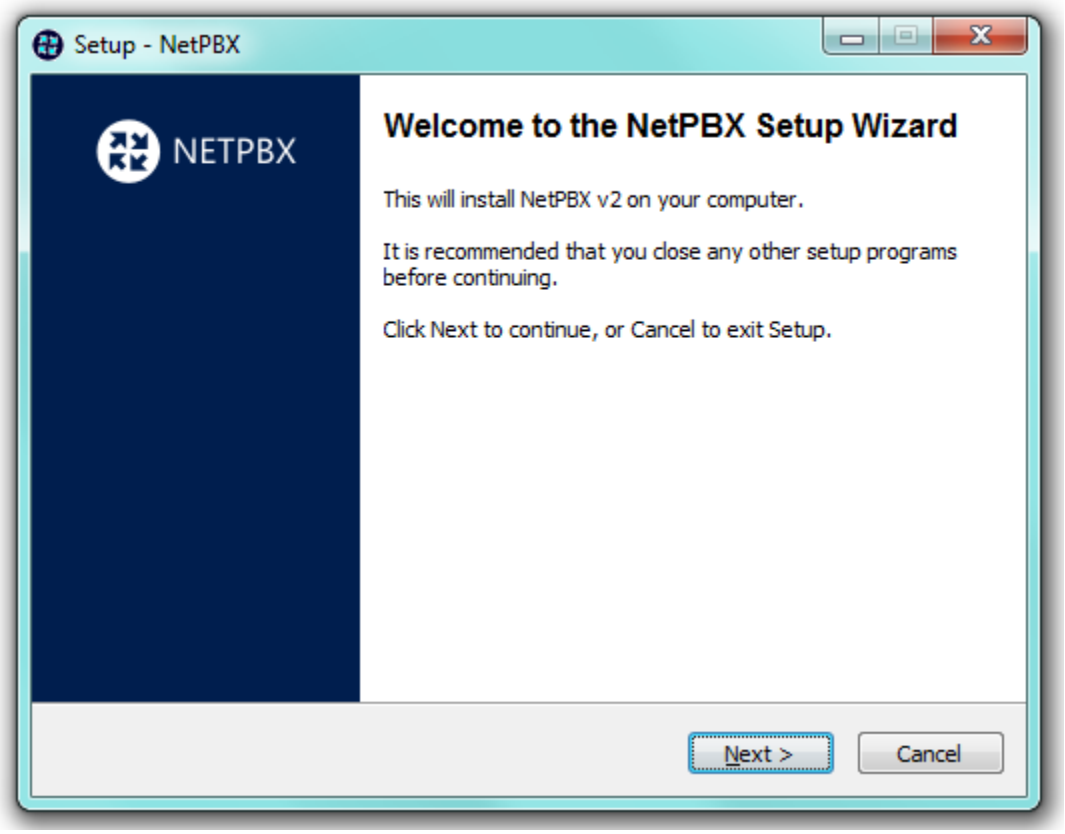
NetPBX is always required for serial connections to PBX equipment, since this ensures a separate data buffer between the PBX and the call logging software.

Additionally, where your infrastructure spans multiple geographical locations, NetPBX can be installed at each one to provide remote buffering and delivery of data back to the central site, where your call logging software is installed.

Installing NetPBX

To obtain a copy of the NetPBX software, contact our Technical Support team.

To install the software, double-click on the setup package and follow the setup wizard in order to complete the installation:



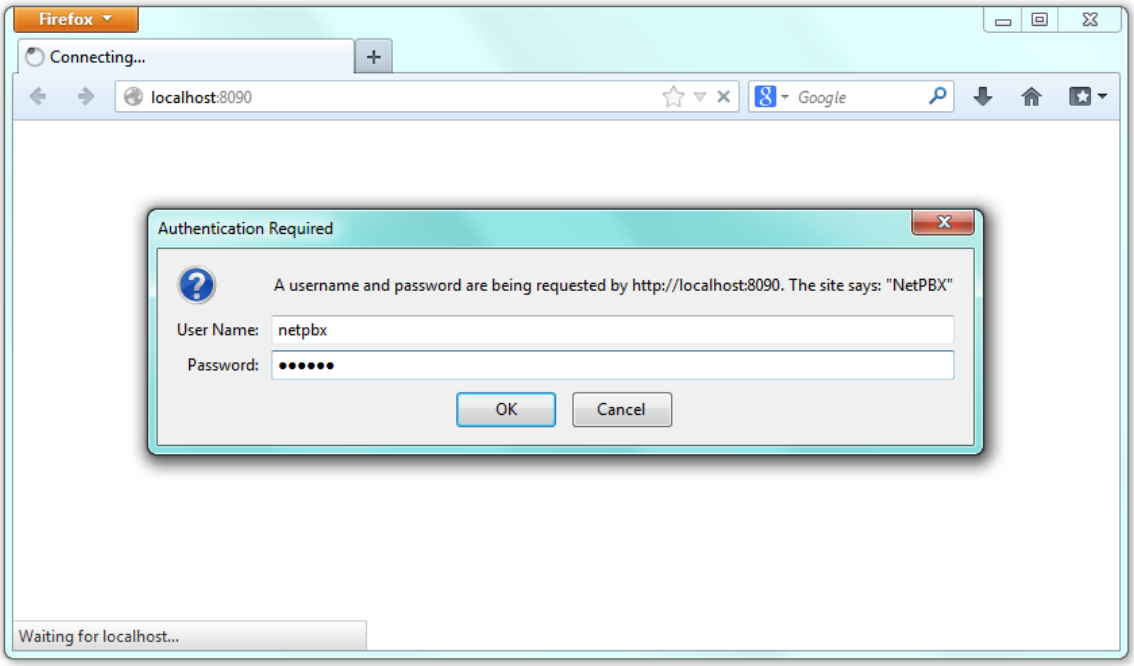
Once installed, you can access NetPBX via any standard web browser. To configure your controllers to collect and deliver your call logging data, refer to the Controllers section below.

Accessing the system

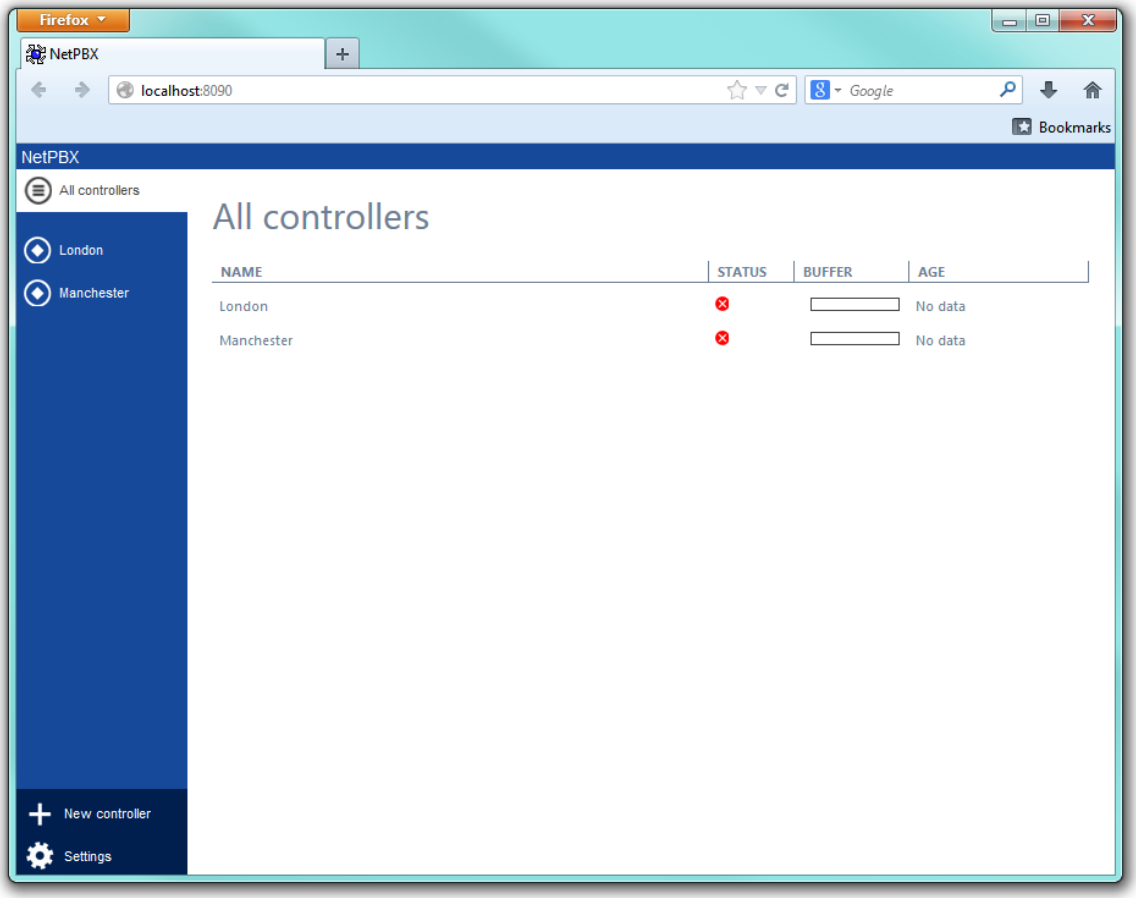
NetPBX can be accessed via a standard web browser from any PC on your network.

To access NetPBX, open a web browser, go to the IP address or host name of the PC running NetPBX and log in using the following credentials:

- **username**: `netpbx`
- **password**: `netpbx`



The main interface of NetPBX will be displayed, where you can view a list of the currently-configured controllers, as shown below:



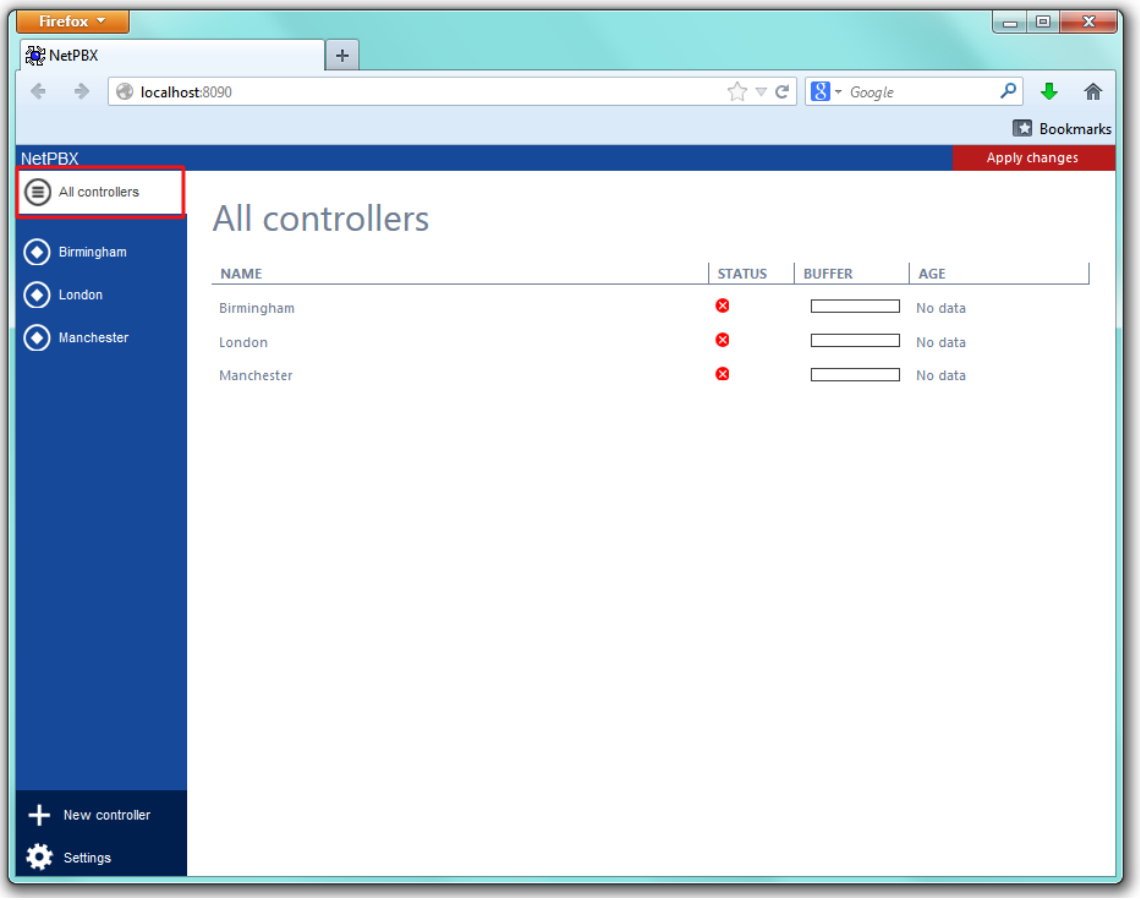
When you first install the software, the **`All controllers`** list will be empty. To add a controller, refer to the Adding a controller section.

Controllers

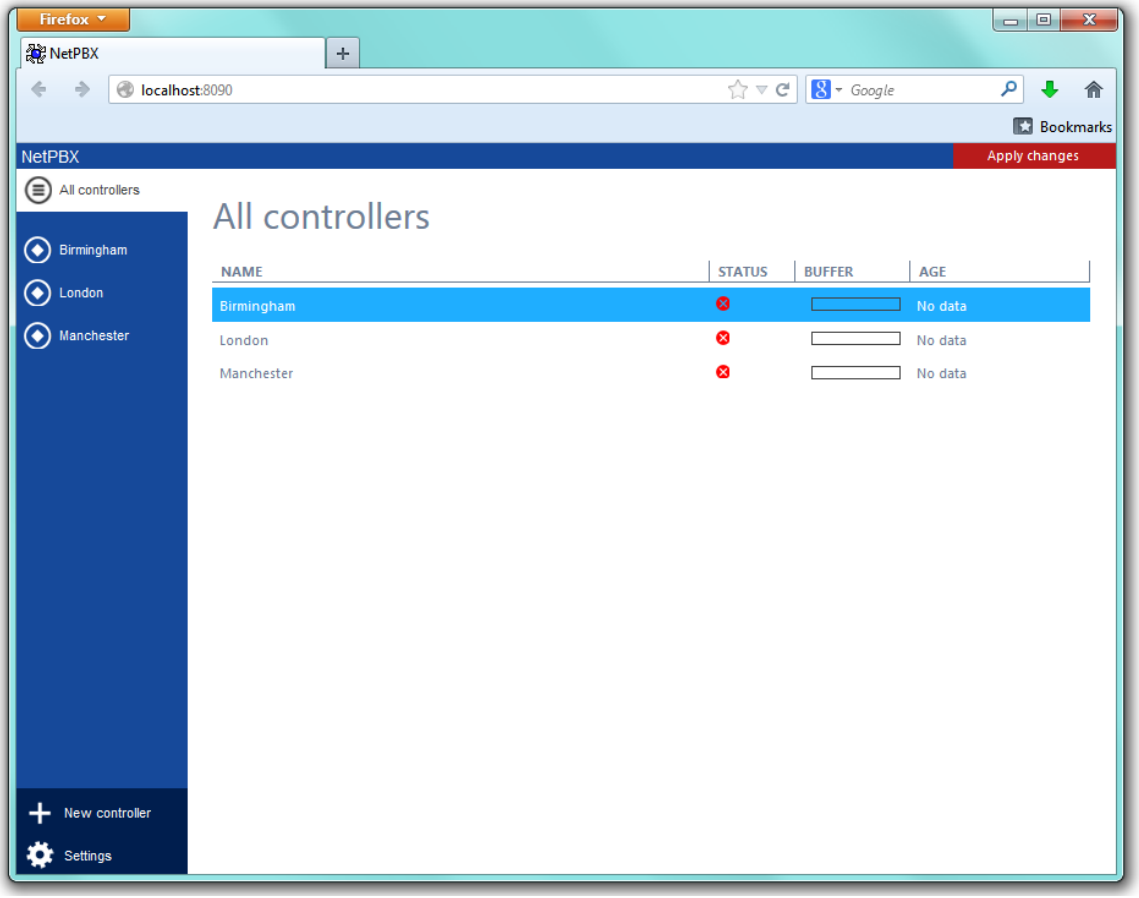
What is a controller?

A controller is the system object that allows you to collect and deliver your call logging data from a data source to an output location. The controller can encompass one or more inputs or outputs, and each input/output instance can invoke a different type of connection.

To see a list with all the controllers configured in the system, click on the **`All controllers`** button, as shown below:



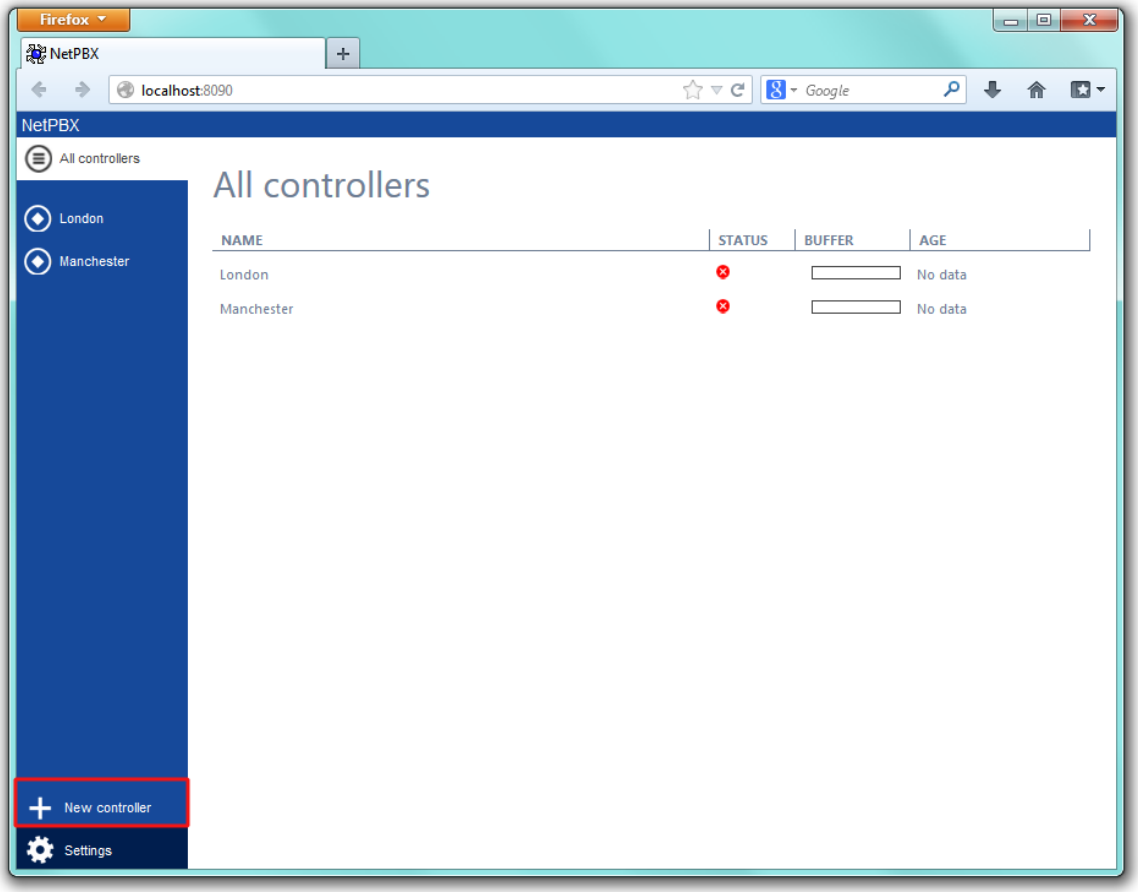
To view or edit the settings of a controller, refer to the Configuring a controller section.



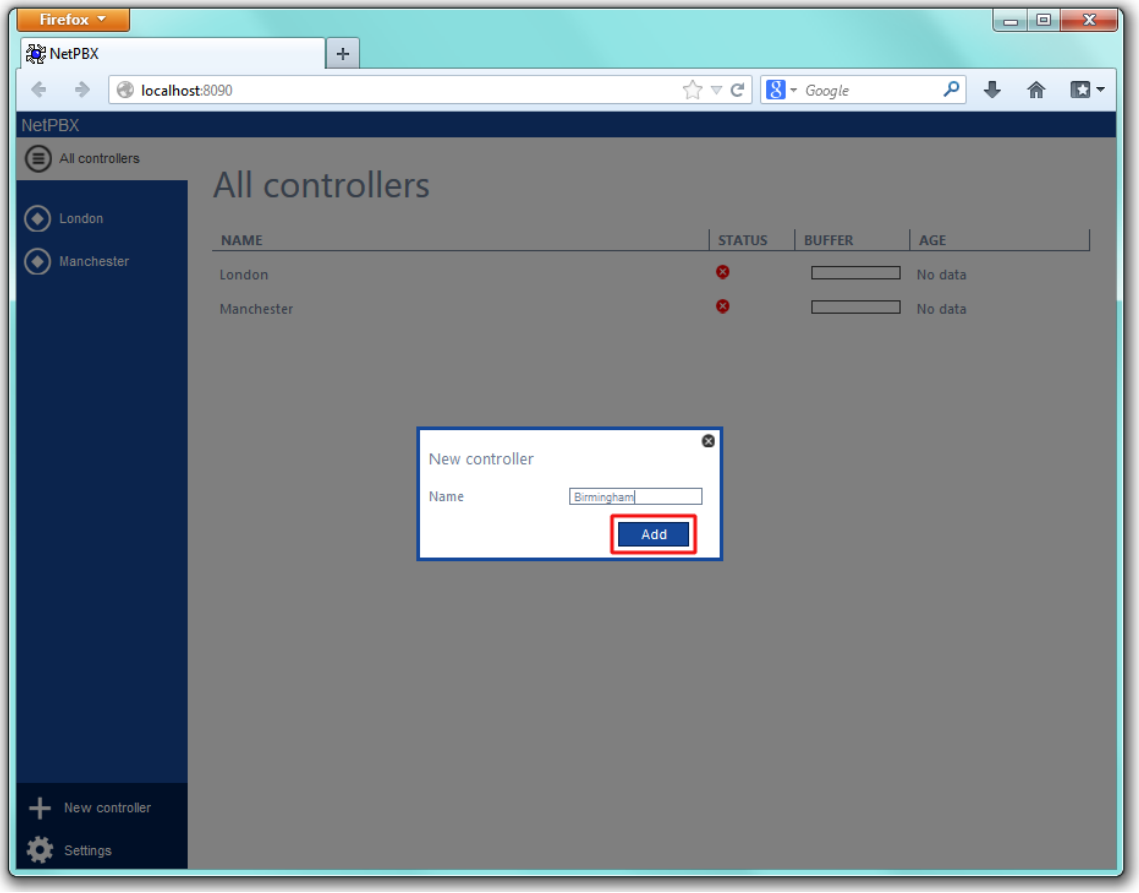
To add a new controller to the system, refer to the Adding a controller section.

Adding a controller

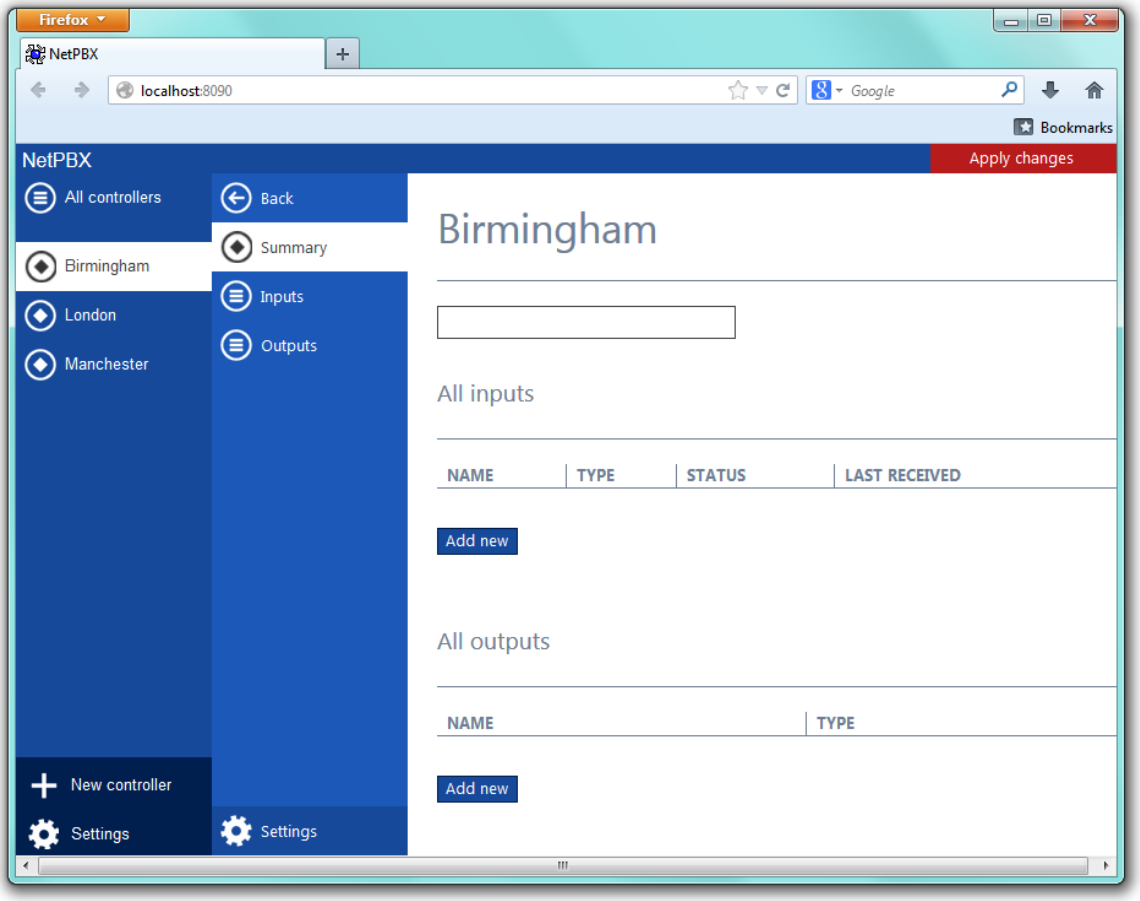
To add a controller to the system, click on the New controller tab at the bottom-left corner of the screen, as shown below:



A new window will appear, allowing you to name your controller. Click on the Add button to add the new controller to the system, as shown below:



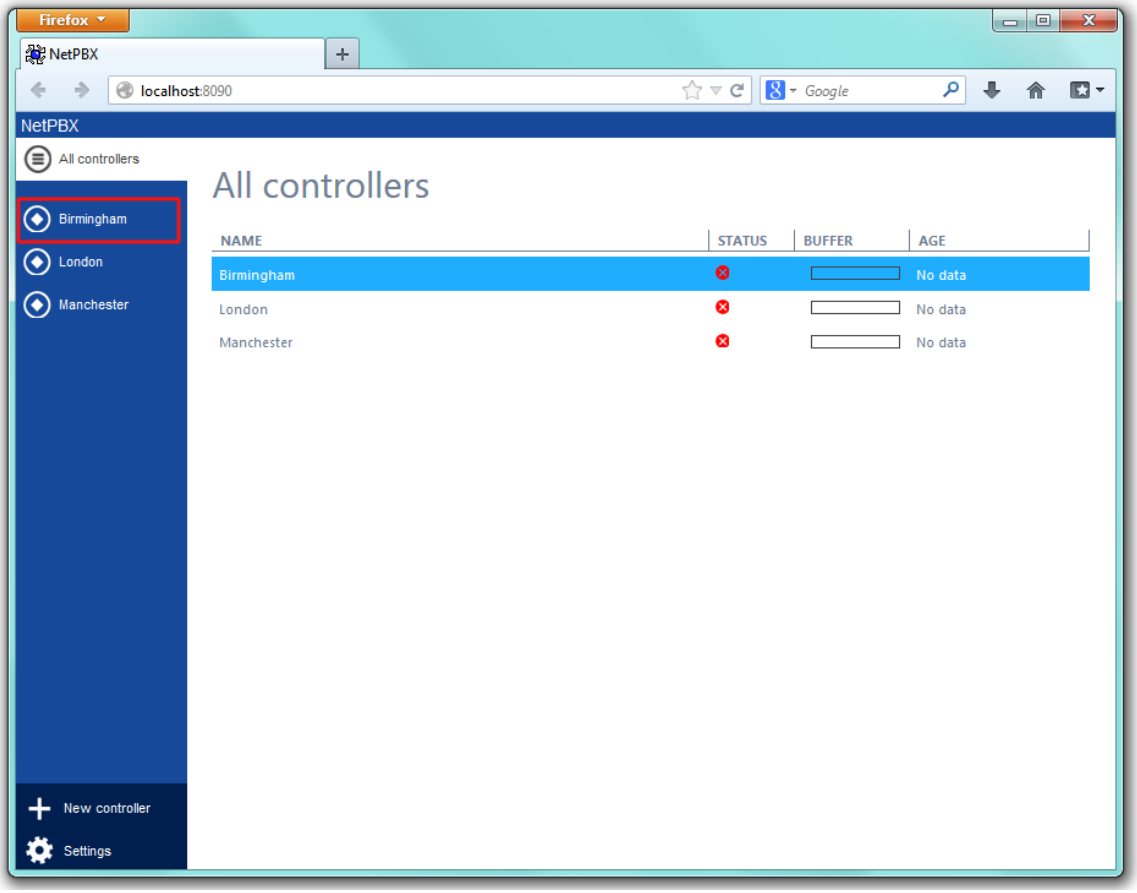
The **Summary** screen will be displayed, allowing you to enter the details of your controller. For information on how to configure these details, check the Configuring a controller section.



Configuring a controller

Overview

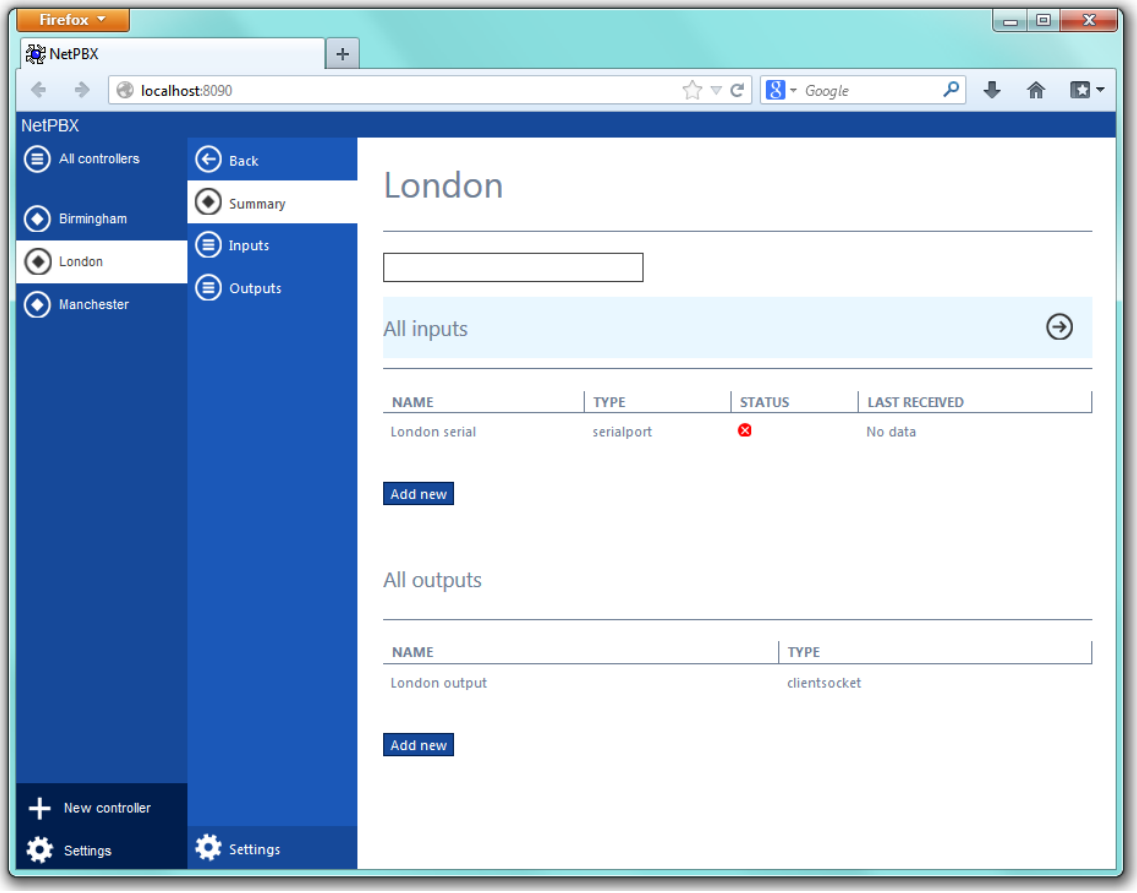
To configure a controller, select it from the **`All controllers`** list, as shown below:



The Summary screen will be displayed, allowing you to configure the inputs and outputs of the selected controller.

Summary

The **Summary** screen gives you an overview of all the inputs and outputs configured for the selected controller. From here you can add new inputs/outputs to the controller or navigate to the configuration section of each particular input/output and modify their settings.



When you first set up the system, the **Summary** screen will be empty. For information on how to add an input or output to a controller, refer to the Inputs or Outputs sections below.

Inputs

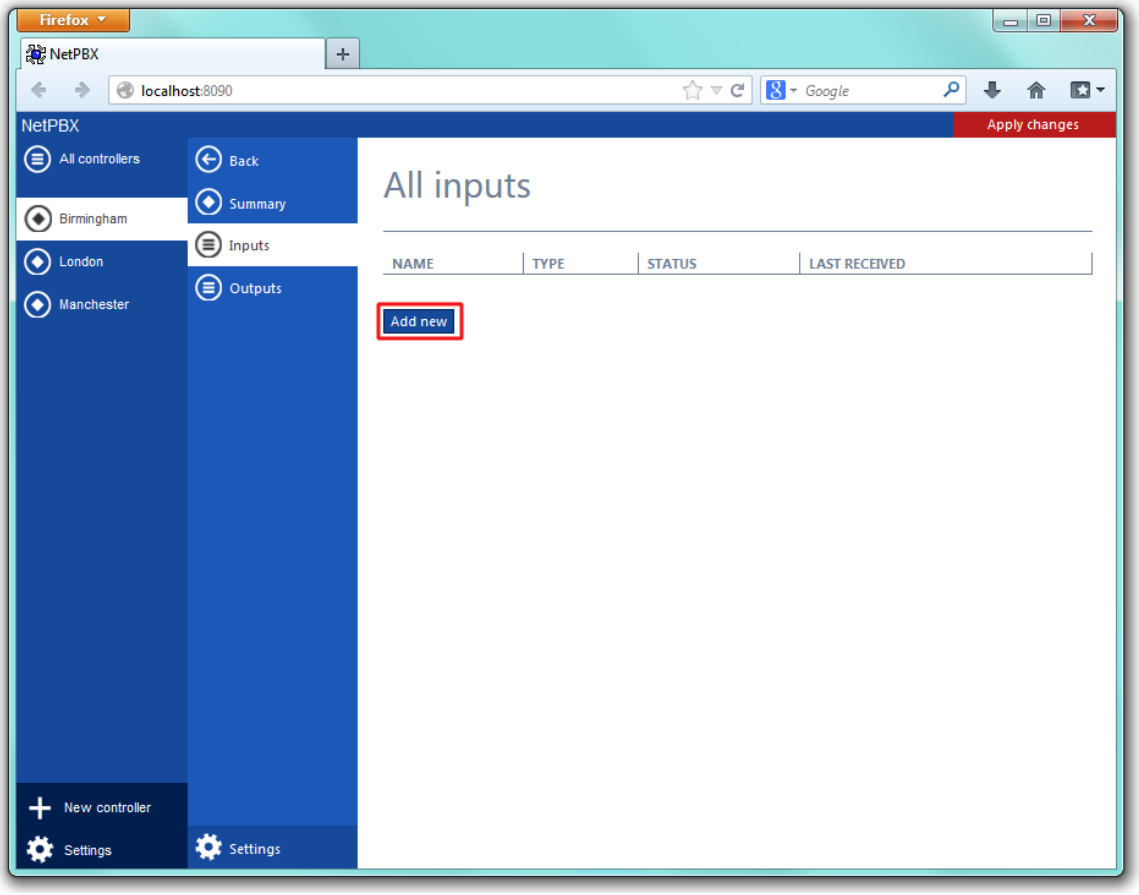
An **Input** is the system object that connects to a data source, such as PBXs, routers and other telecom signalling equipment, in order to collect the call logging data.

Inputs

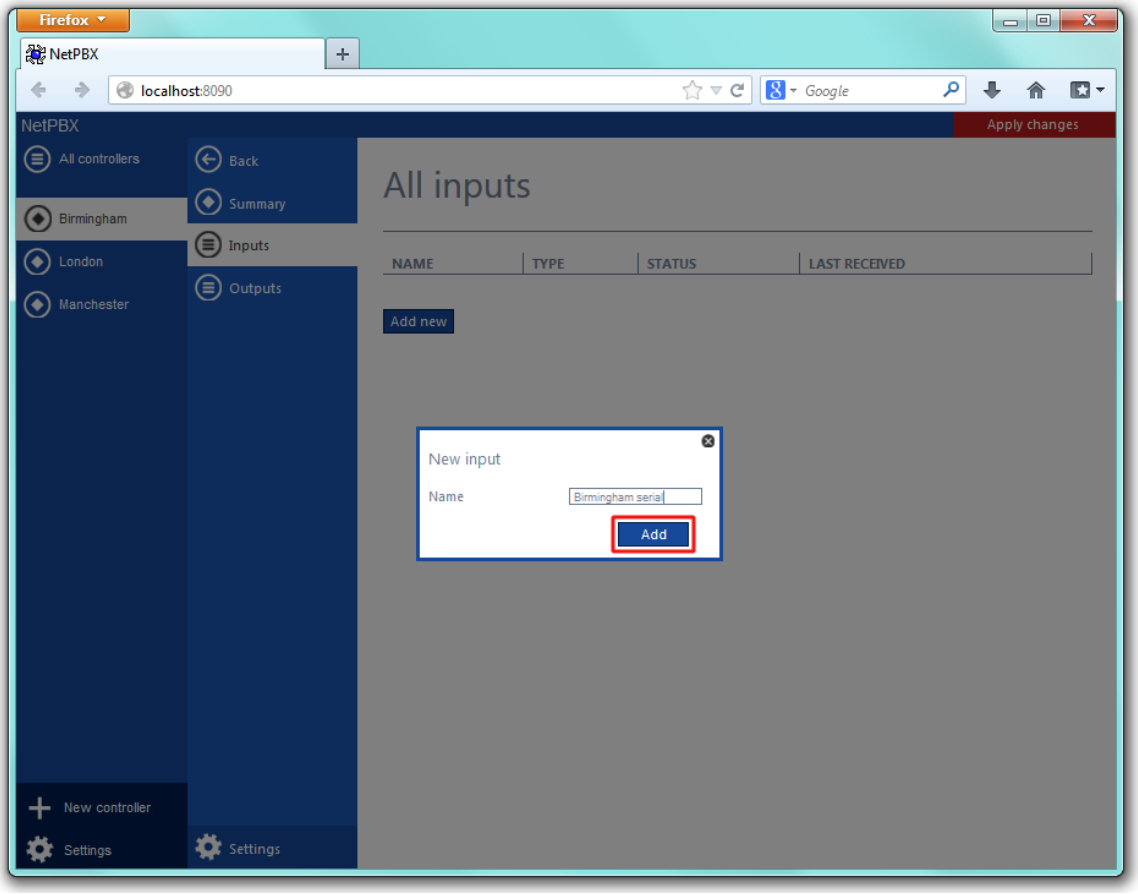
- Adding an input
- Configuring an input
- Input types
- Deleting an input

Adding an input

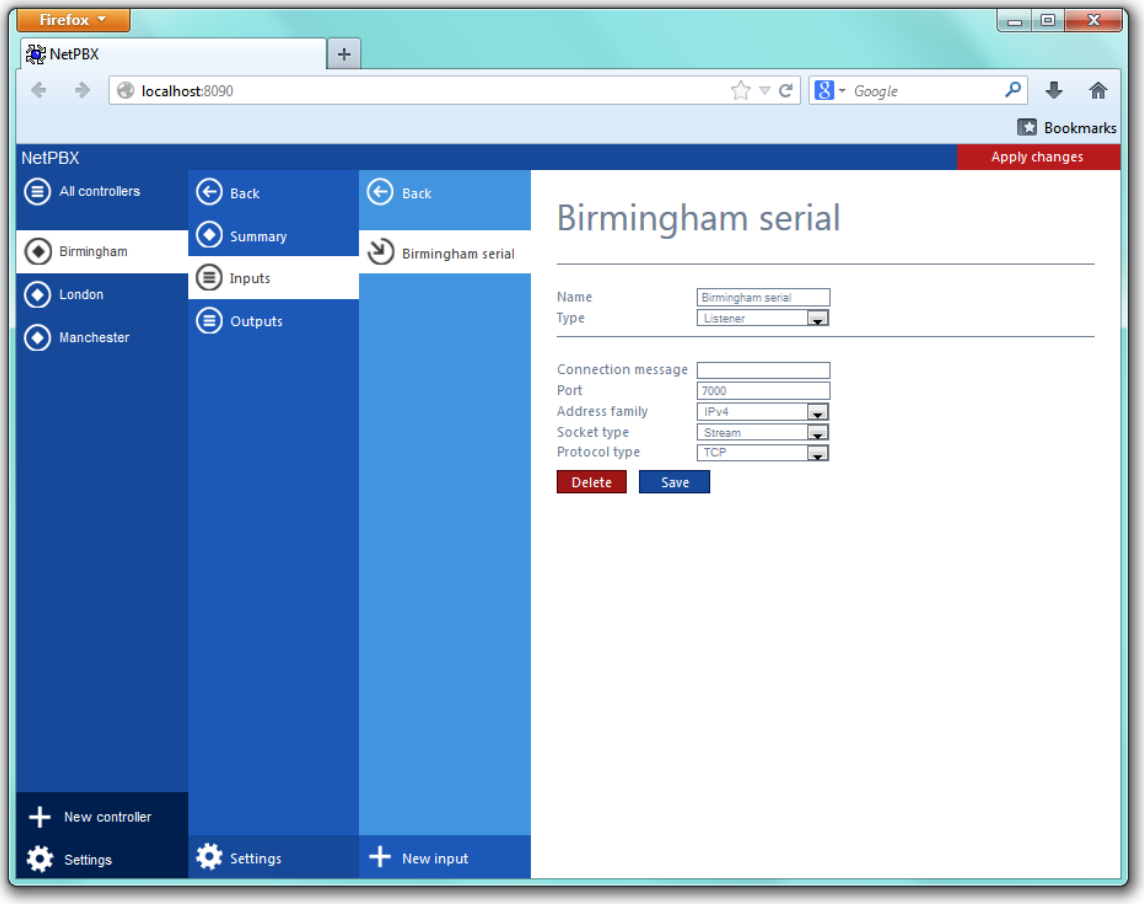
To add a data input, click on the Add new button from either the **Summary** or the **Inputs** screen, as shown below:



A new window will open, allowing you to name the input. Click on the Add button to add the input to the system, as shown below:

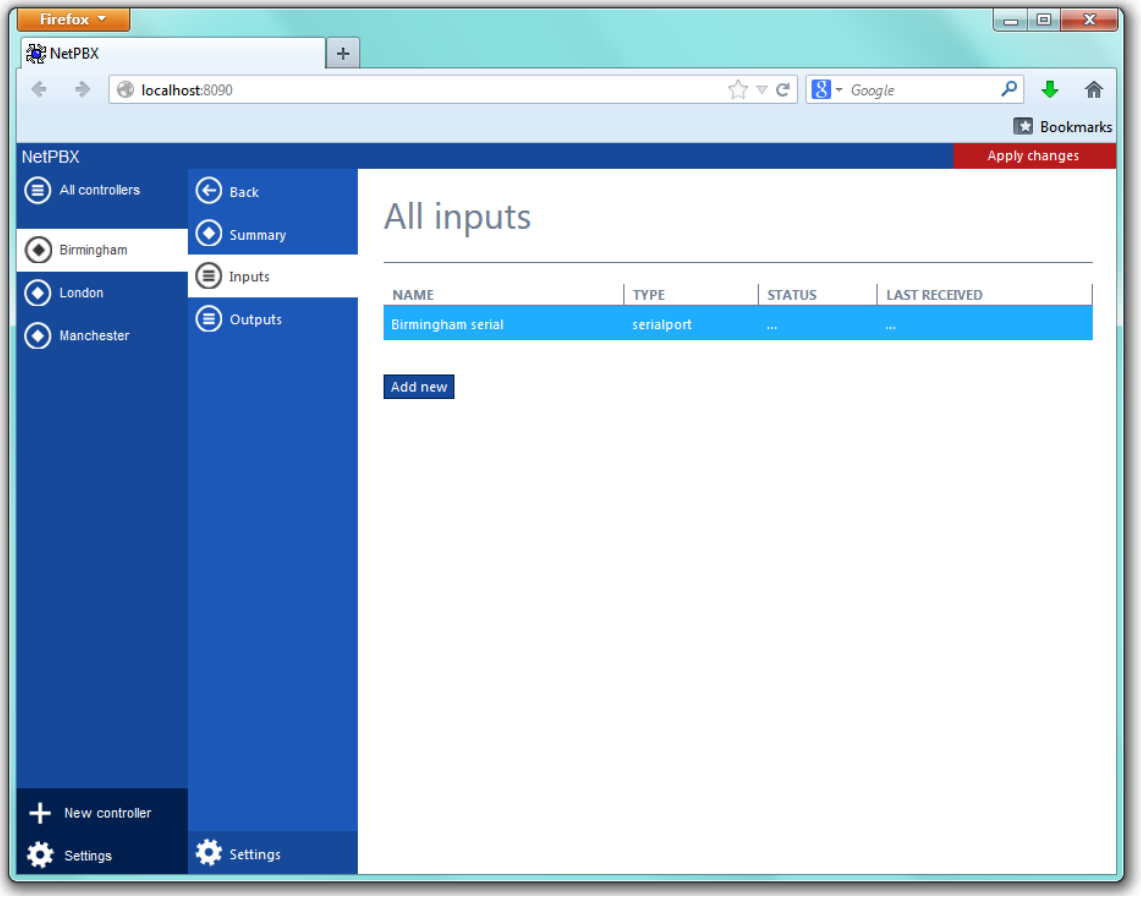


The input-configuration screen will be displayed. For information on how to configure these settings, refer to the Configuring an input section below.

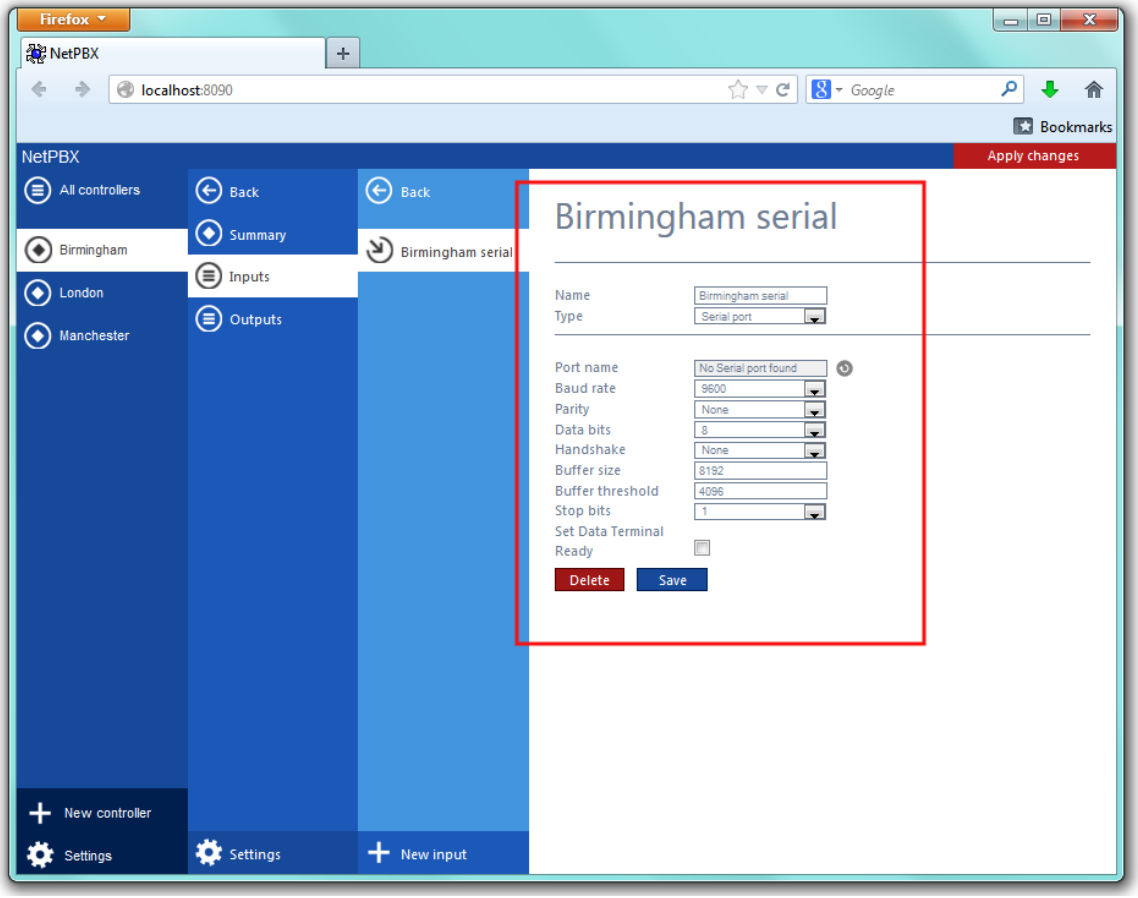


Configuring an input

To configure a data input, select it from the **`All inputs`** list, as shown below:



A new window will open on the right-hand side panel, allowing you to configure the settings of your data input:



The settings displayed in this window will be described below:

Name

The **Name** field allows you to view or edit the name of the selected input. To rename, overtype the current entry.

Type

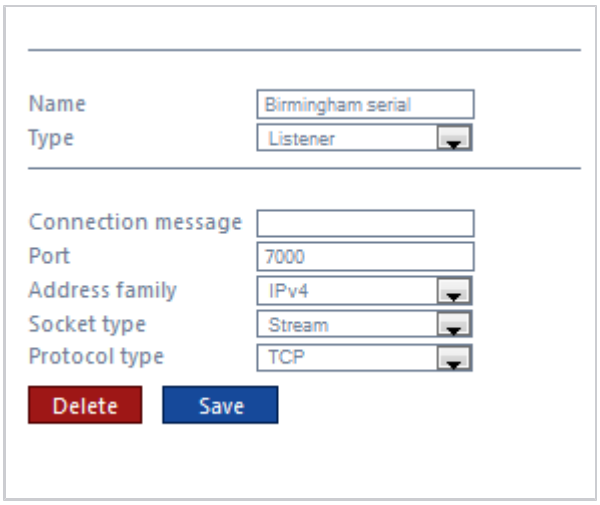
The **Type** field allows you to specify the connection method you want to use to collect the data from the phone system. The following connection methods are supported in NetPBX:

- Listener
- Serial port
- Client socket
- Pipe server
- BCM SSH
- XML file
- File reader
- BCM DCOM

Input types

Listener

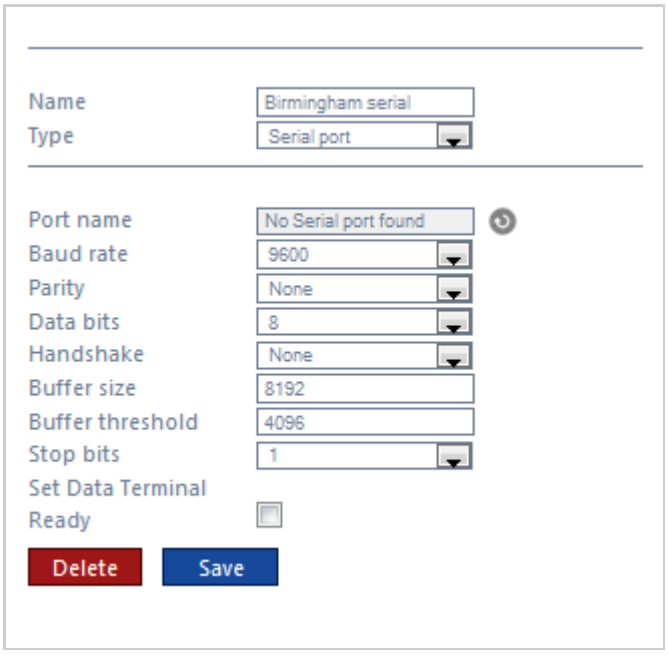
This method creates a socket and binds it to a specific port, accepting any data received on the connection without challenge.



Field	Description
Connection message	An optional greeting message which is sent to any connecting socket. This message can include one or more of the following variables: • `{remoteip}` - the IP address of the remote party • `{remoteport}` - the remote party's source port
Port	The port that the listener should bind to
Address family	The address family of the socket
Socket type	The type of data flow the socket expects
Protocol type	The type of protocol the listener will use

Serial port

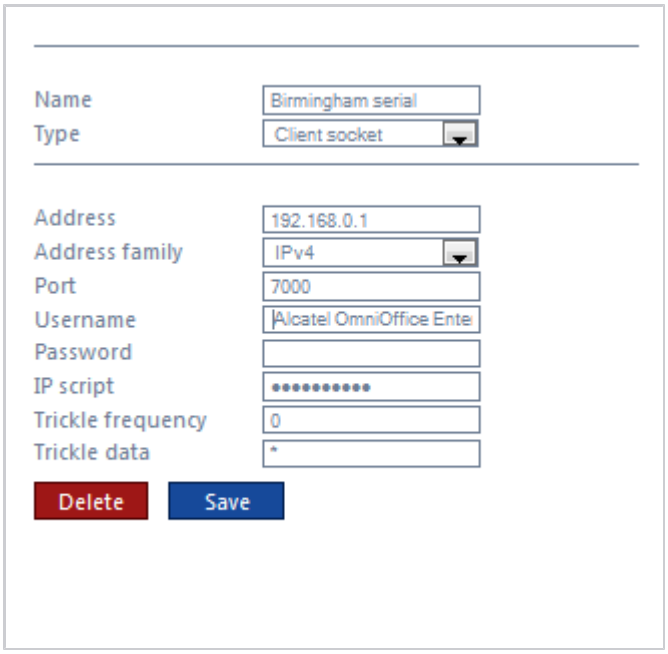
This method allows the connection of a serial (RS-232) device.



Field	Description
Port name	The name of the serial port device, e.g. COM 1, COM 2
Baud rate	The serial port's speed
Parity	The parity check regime • **none** - no parity checking is performed • **odd** - odd bits parity checking is performed • **even** - even bits parity checking is performed
Data bits	The number of data bits, between 5 and 8
Handshake	The type of handshake the serial port requires: • **none** - no handshake required • **rts** - request to Send • **xonxoff** - X-On/X-Off • **rtsxonxoff** - either RTS or X-On/X-Off is used
Buffer size	The size of the data buffer of the serial port
Buffer threshold	The size that the buffer must first reach before being empty
Stop bits	The number of stop bits used

Client socket

This method creates a TCP socket and connects to a remote host.

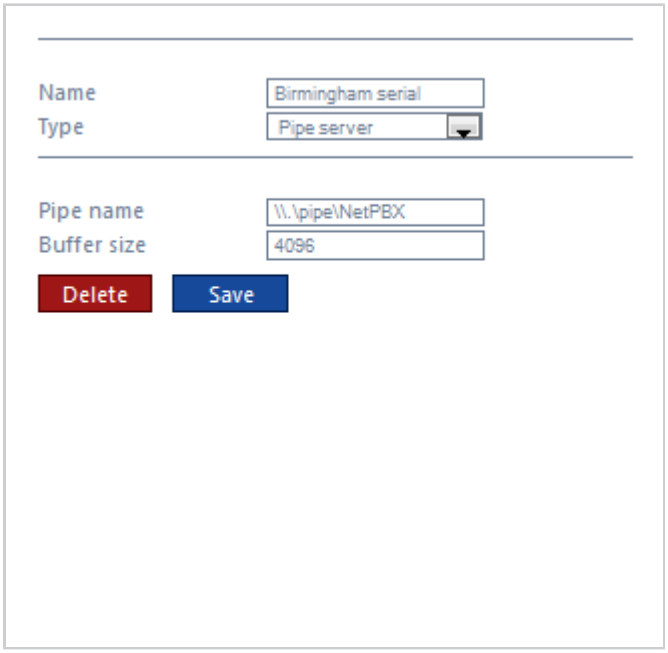


Field	Description
Address	The IP address or hostname to which the socket should connect
Address family	The address family of the socket

Port	The port that the listener should bind to
Username	The username required by the data source, if applicable
Password	An optional password which is sent upon successful connection
IP script	The script file used by NetPBX to check for new data
Trickle frequency	This option allows you reset the connection between NetPBX and remote host, in case of inactivity. When the system becomes inactive, NetPBX sends a string of data back to the remote host in order to test the connection. Sending the trickle back data will emit a detectable error in case a disconnection has occurred and, thus, will cause the connection to reset. The `Trickle frequency` option allows you to configure the amount of inactivity that must occur (in miliseconds) before a trickle back is performed.
Trickle data	A string containing the data to be sent back

Pipe server

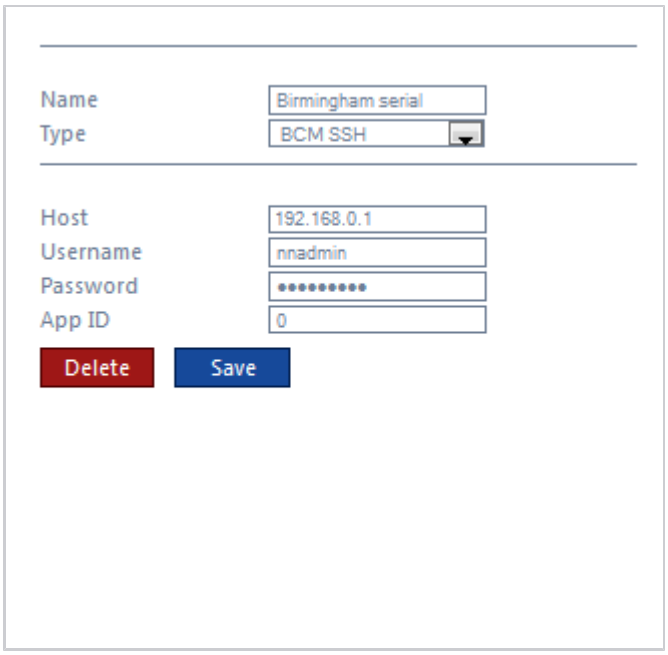
This method opens a global named pipe and accepts any data that is sent to it.



Field	Description
Pipe name	The name of the pipe that is created
Buffer size	The size of the buffer, in bytes, that is allocated to the pipe

BCM SSH

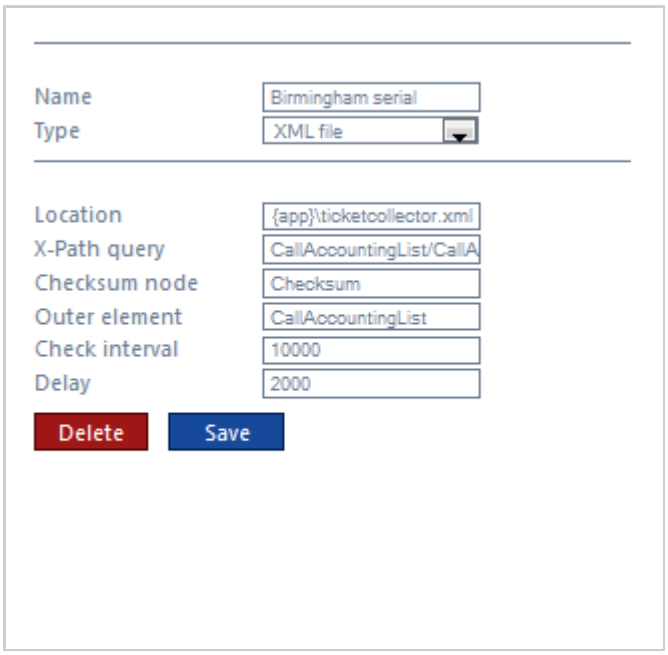
This method registers a connection with the `Nortel CDRClient.dll` library and receives data-callbacks whenever the PBX produces data.



Field	Description
Host	The IP address or hostname of the BCM PBX
Username	The username required to access the CDR events
Password	The password required to access the CDR events
App ID	The unique ID number given to each source of data.

XML file

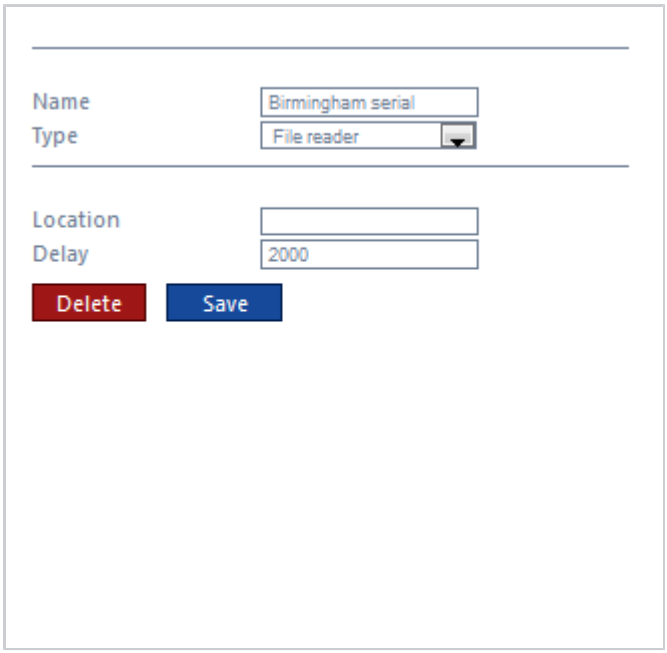
This method monitors an XML file for new nodes. To specify which nodes to monitor, an XPath query is used; to identify which nodes are new, a unique element is required. Default properties are designed to work with the `ticketcollector.xml` file produces by an `Alcatel OmniPCX Enterprise` PBX.



Field	Description
Location	The full filename of the XML file to be monitored. The **{app}** variable can be used to specify the program data location of the running service
X-Path query	The XPath query to use when testing for new nodes
Checksum node	The unique node(element) to be used to track which nodes have been added since the last check
Outer element	The name of the outer XML element to be used to contain any new nodes when the new XML document is created for output
Check interval	The time interval the system is checking for a new node.
Delay	A value, in milliseconds, that specifies the artificial delay that is waited when a change in the source XML file is discovered.

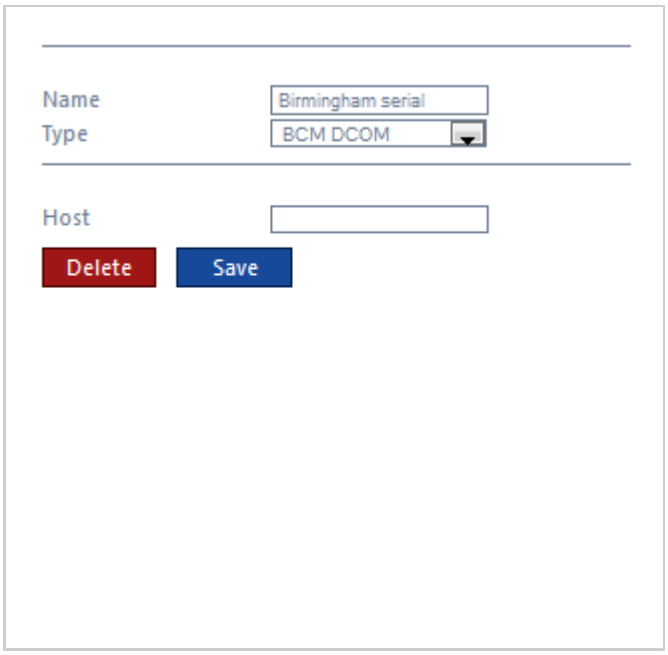
File reader

This method opens a connection to an actual file.



Field	Description
Location	The path of the folder where the file is located

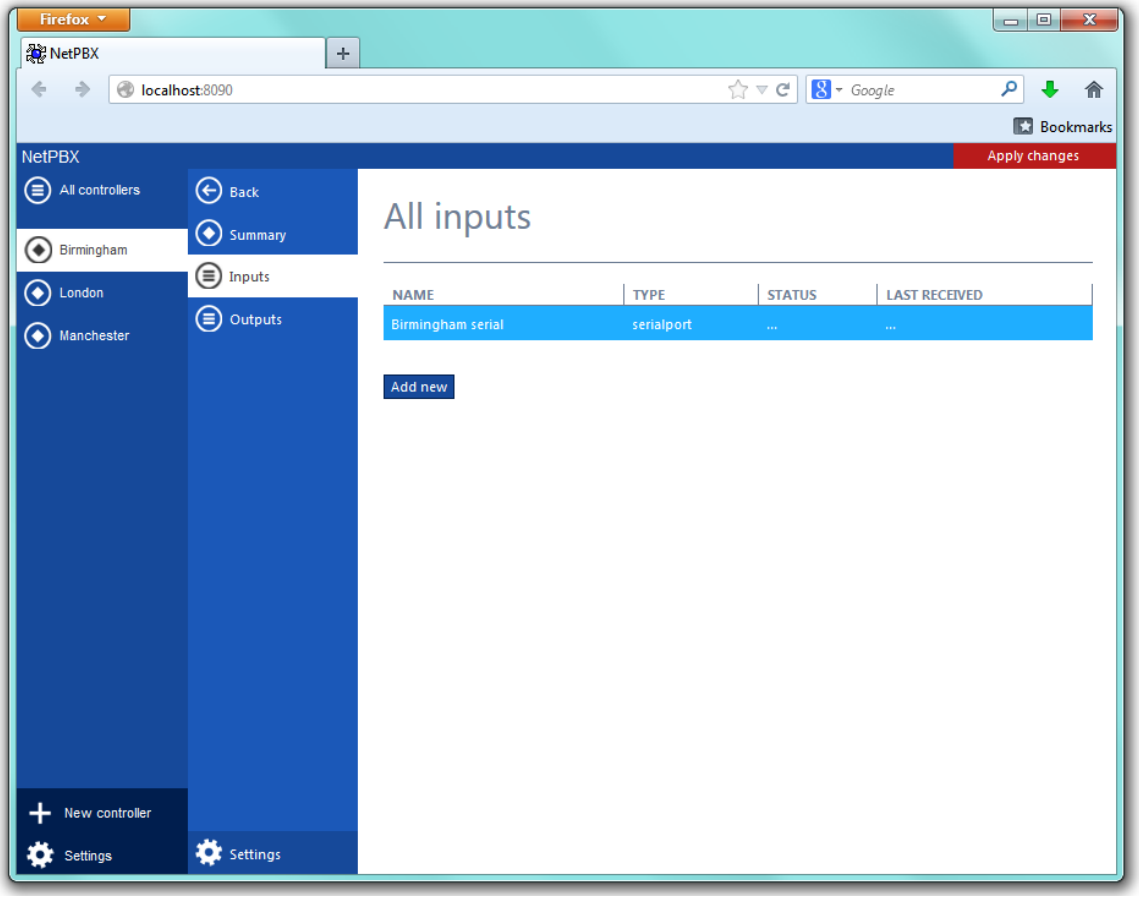
BCM DCOM



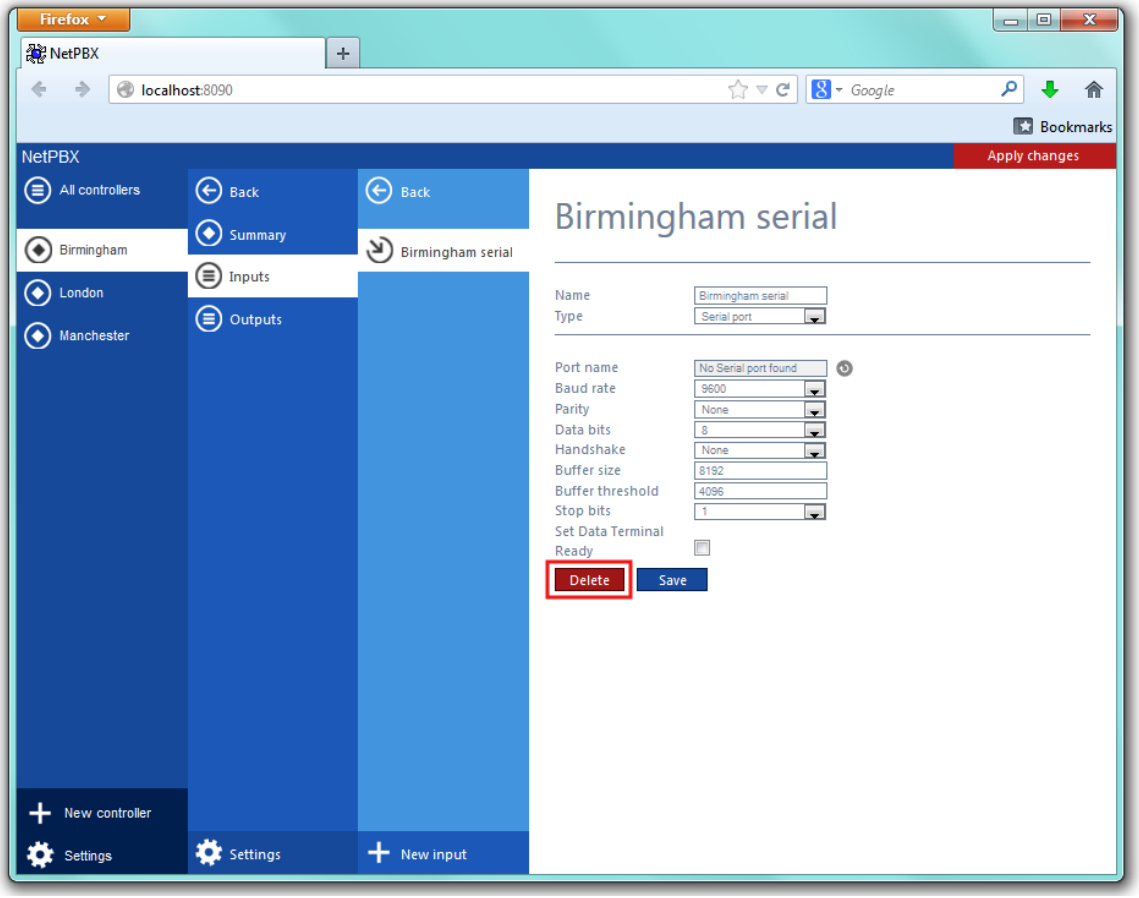
Field	Description
Host	The IP address or hostname of the BCM PBX

Deleting an input

To delete a data input, select it from the **`All inputs`** list, as shown below:



A new window will open on the right-hand side panel. Click on the Delete button to remove the input from the system, as shown below:



Outputs

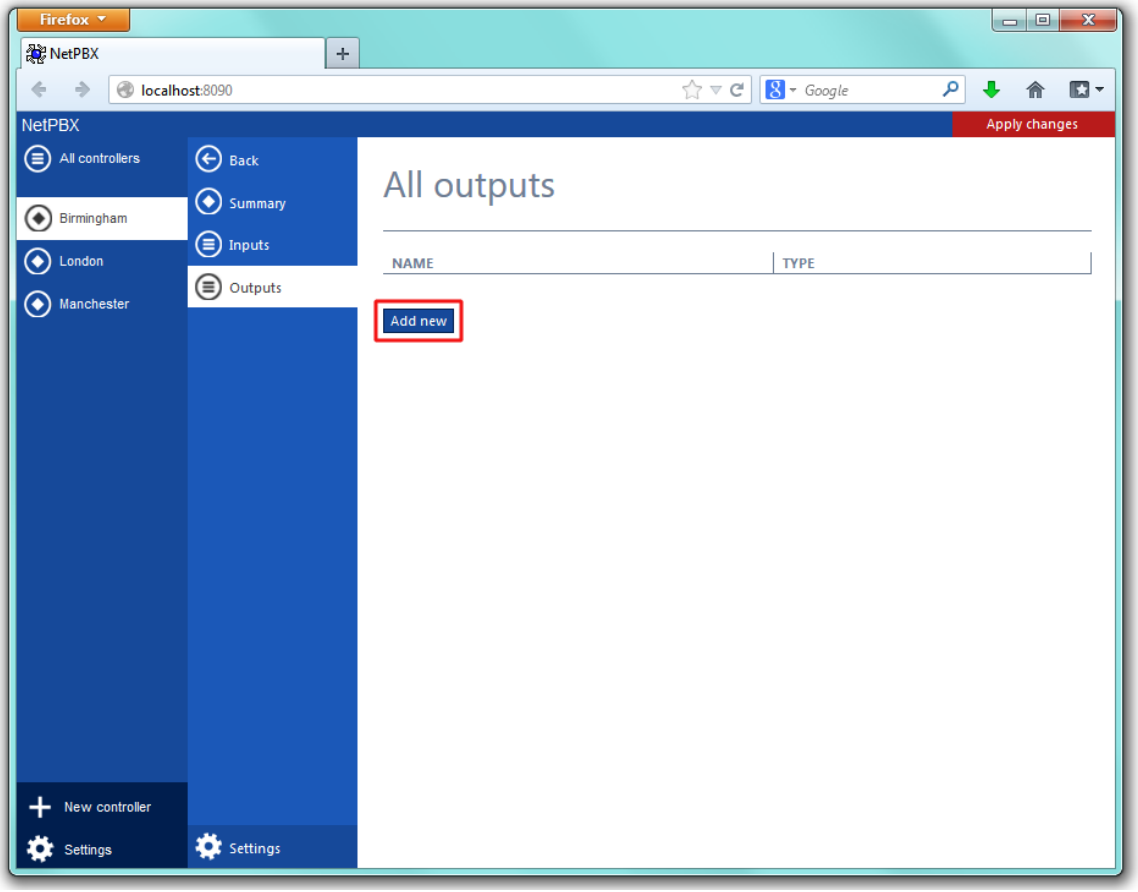
An **`Output`** is the system object that delivers the collected call logging data to a specified location.

Outputs

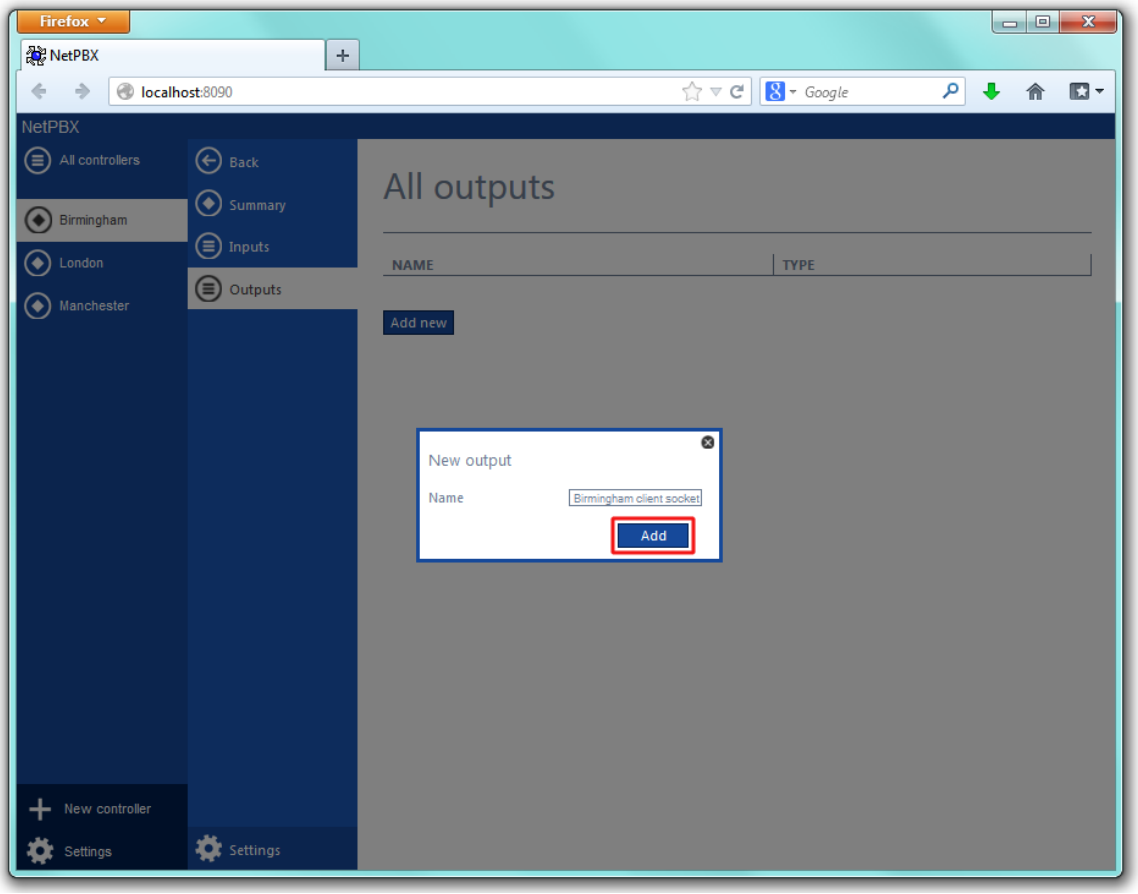
- Adding an output
- Configuring an output
- Output types
- Deleting an output

Adding an output

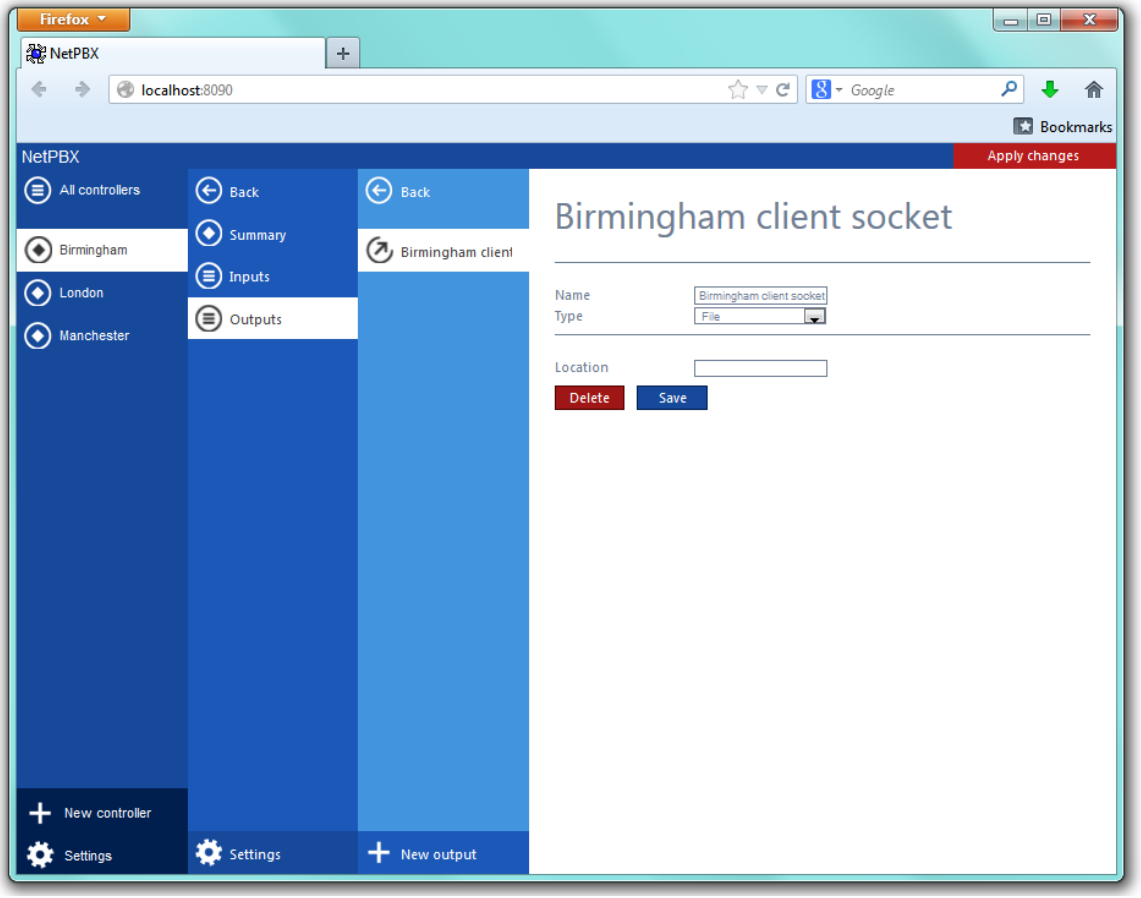
To add a data output, click on the Add new button from either the **`Summary`** or the **`Inputs`** screen, as shown below:



A new window will open, allowing you to name the data output. Click on the Add button to add the output to the system, as shown below:

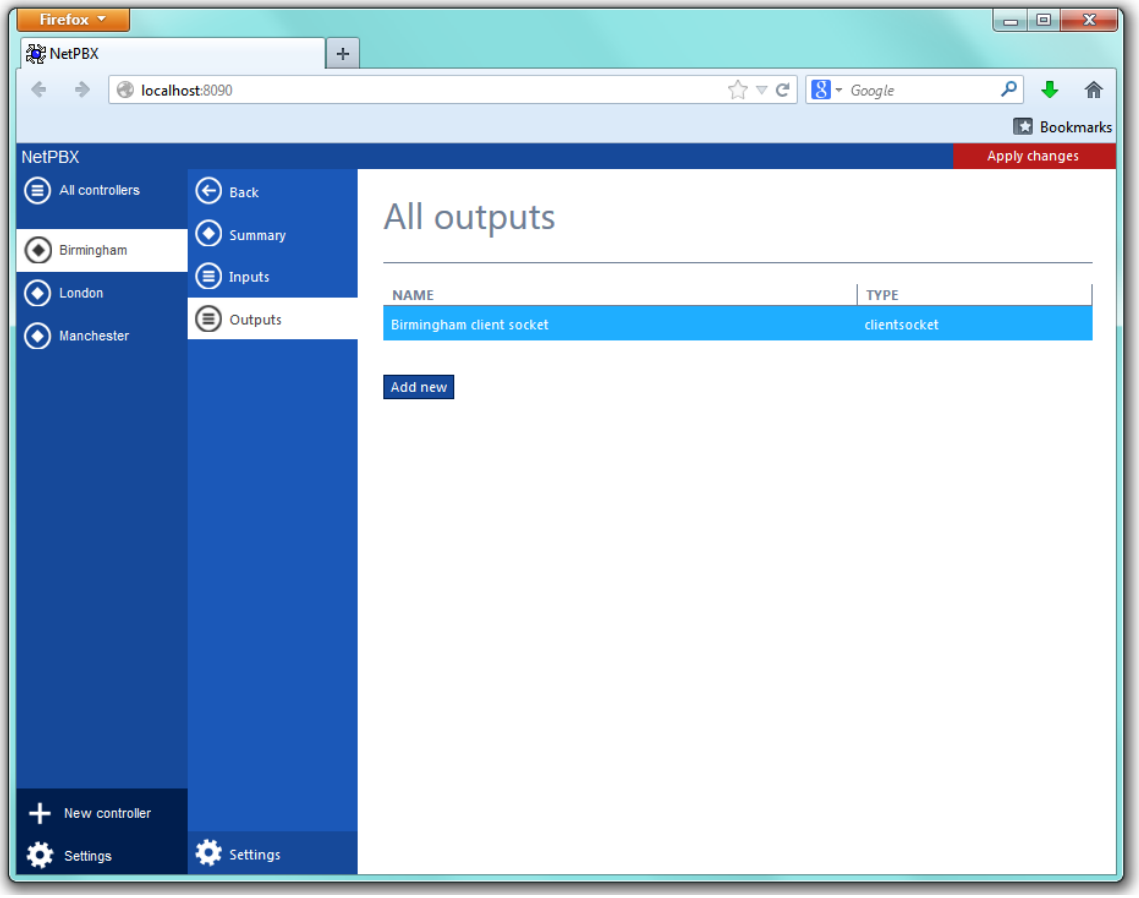


The output-configuration screen will be displayed. For information on how to configure these settings, refer to the Configuring an output section below.

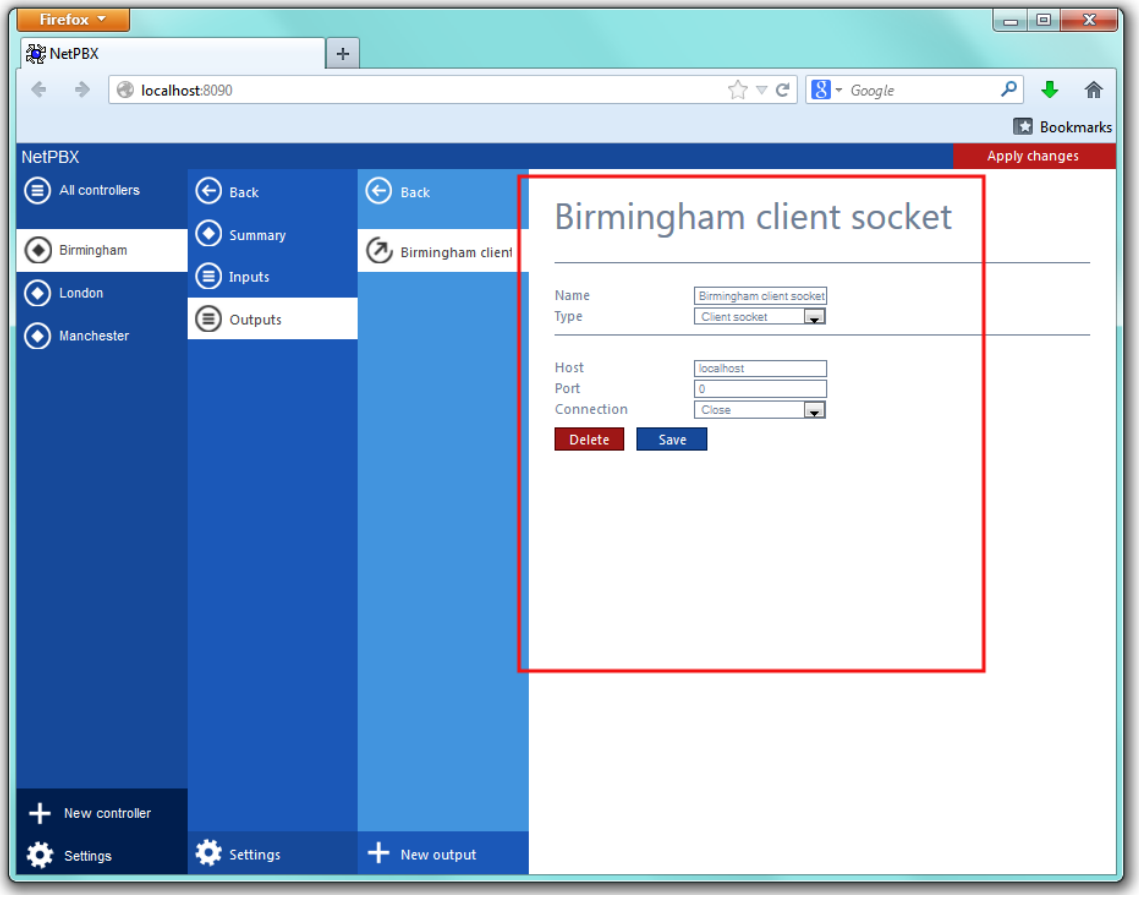


Configuring an output

To configure a data output, select it from the **`All outputs`** list, as shown below:



A new window will open on the right-hand side panel, allowing you to configure the settings of your data output:



The settings displayed in this window will be described below:

Name

The **Name** field allows you to view or edit the name of the selected output. To rename, overtype the current entry.

Type

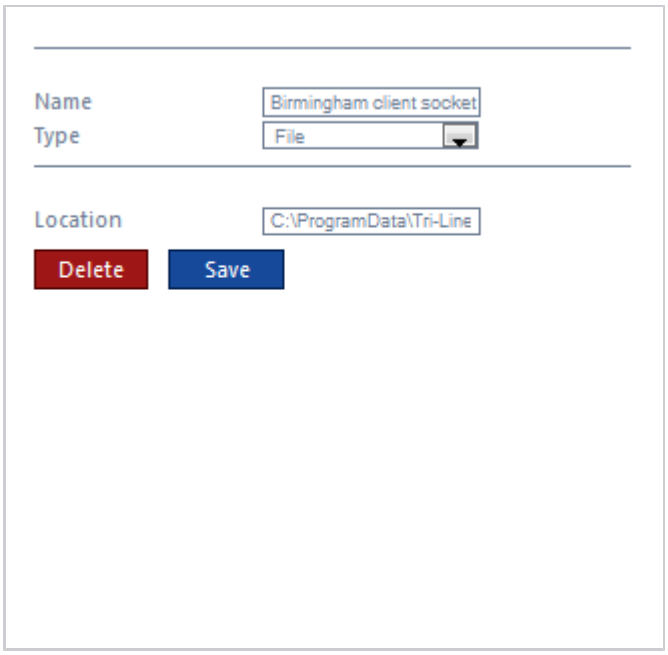
The **Type** field allows you to select the method you want to use when delivering the call logging data to an output location. The following methods are supported:

- File
- HTTP Post
- Serial port
- Client socket

Output types

File

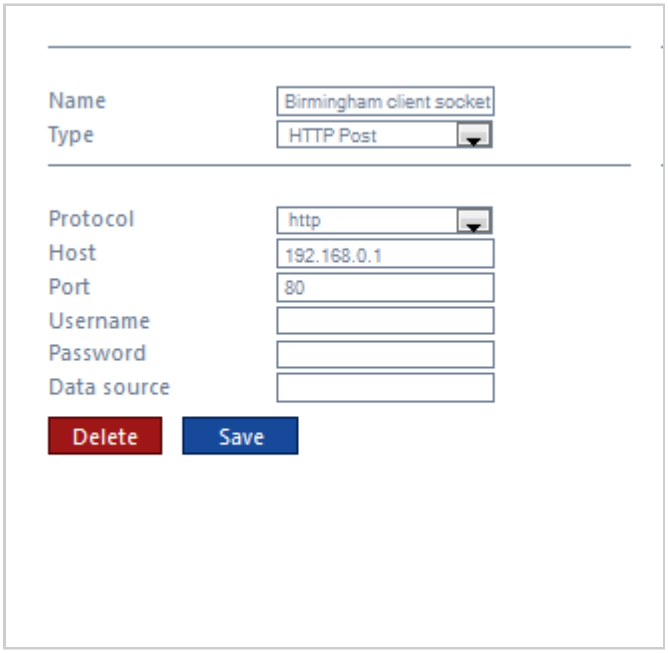
This method opens a file and creates or appends buffered data.



Field	Description
Location	The name of the file to output data to. If the location doesn't exist, an attempt is made to create it, including the path. The following variables are replaced: `{app}` - The path to the location of the application's data folder, e.g. `C:\ProgramData\Tri-Line\NetPBX`.

HTTP Post

This method allows you to deliver data to a running instance of TIM Plus or TIM Enterprise by way of an HTTP POST. The HTTP headers include the datasource information required for the receiving application to identify the source of the data.

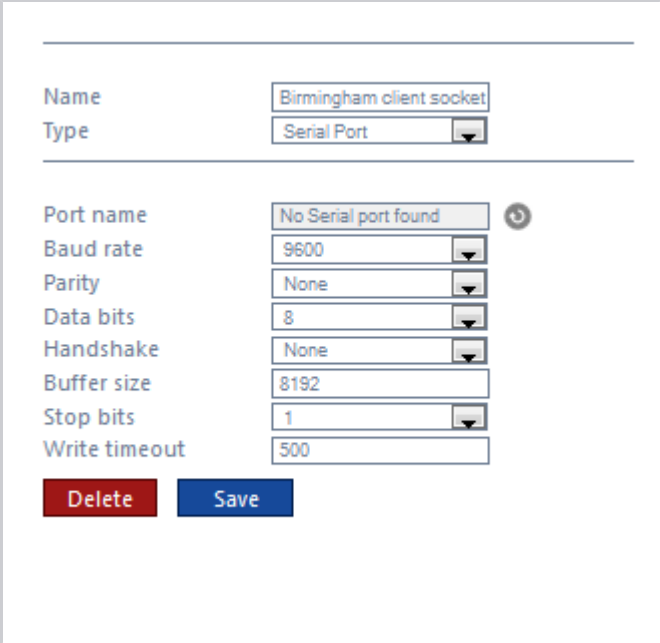


Field	Description

Protocol	The protocol to use when constructing the URL of the target server to send data to
Host	The IP address or hostname where the receiving HTTP server is listening
Port	The port number to which the target HTTP server is bound
Username	The username required to access the target server
Password	The password required to access the target server
Data source	The UIV of the PBX datasource object in the target application, which will be deemed to have created the source data

Serial port

This method opens a serial (RS-232) port and sends any received data to it.

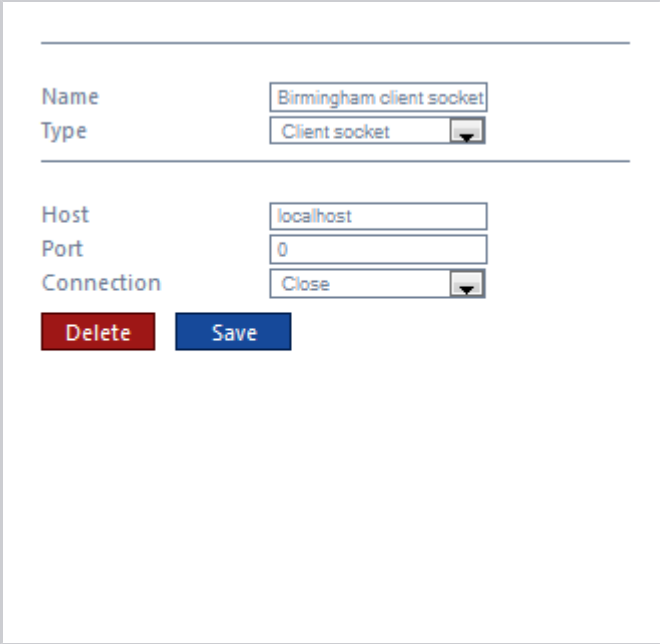


Field	Description
Port name	The name of the serial port device, e.g. COM 1, COM 2
Baud rate	The serial port's speed
Parity	The parity check regime • **none** - no parity checking is performed • **odd** - odd bits parity checking is performed • **even** - even bits parity checking is performed
Data bits	The number of data bits, between 5 and 8
Handshake	The type of handshake the serial port requires: • **none** - no handshake required • **rts** - Request to Send • **xonxoff** - X-On/X-Off • **rtsxonxoff** - either RTS or X-On/X-Off is used

Buffer size	The size of the serial port's data buffer
Buffer threshold	The size that the buffer must first reach before being empty
Stop bits	The number of stop bits used

Client socket

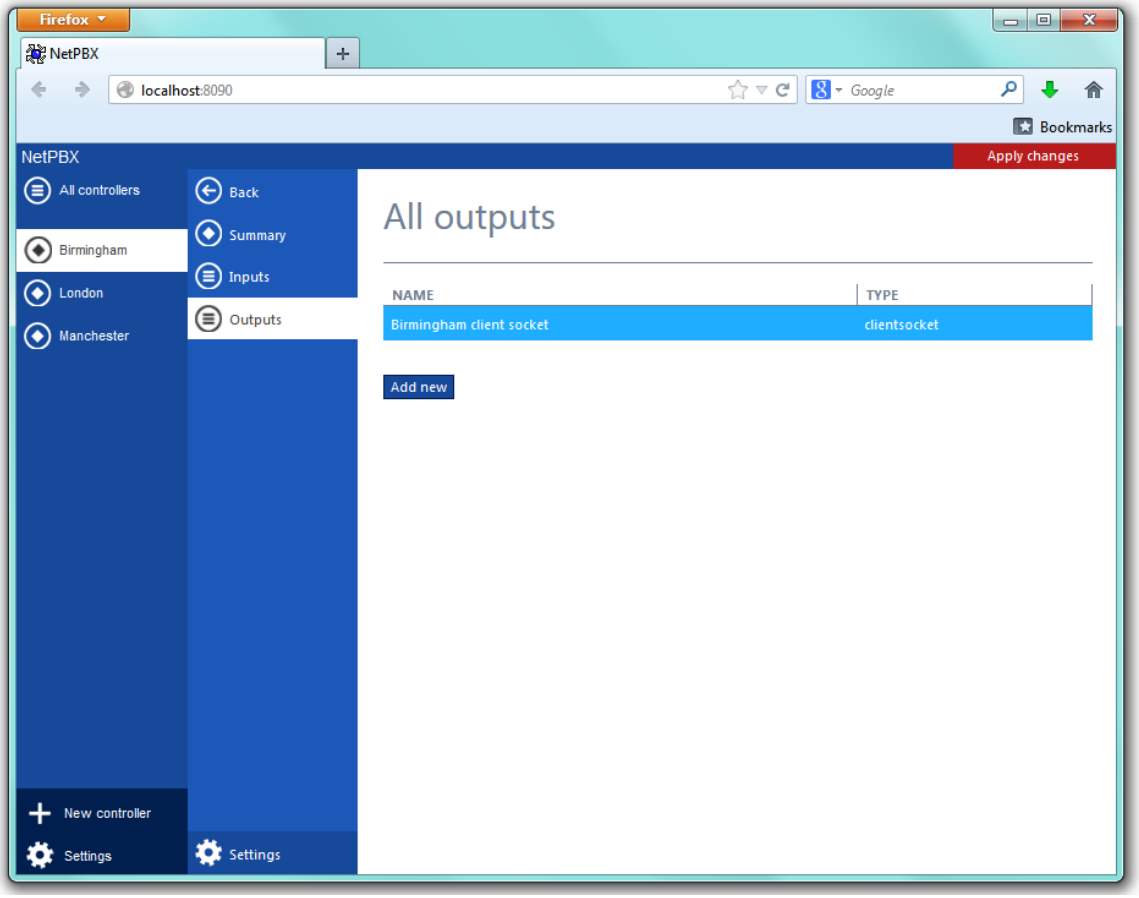
Creates a momentary TCP client socket connection to a remote TCP server.



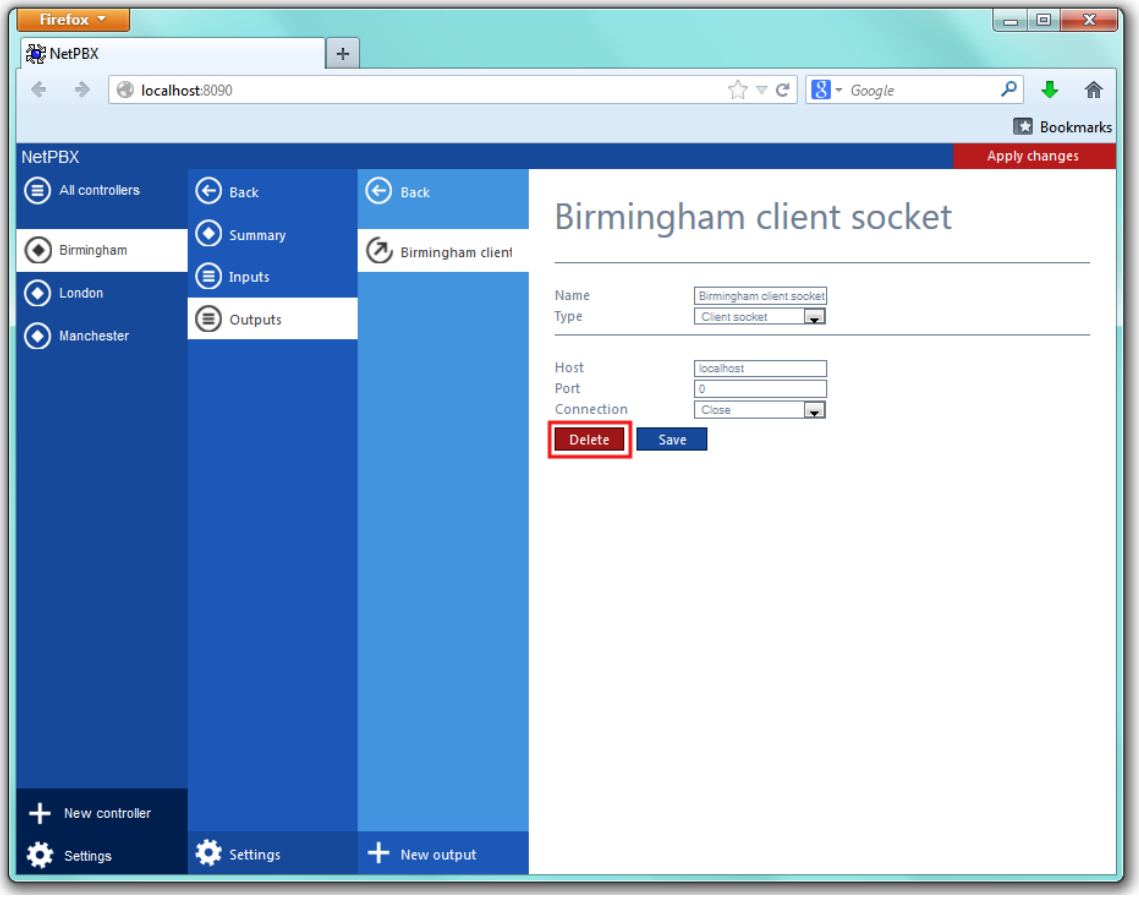
Field	Description
Host	The IP address or hostname of the remote TCP server
Port	The TCP port number to which the remote TCP server is bound
Connection	Determines the behaviour of the connection: • **`close`** - creates and closes the connection every time data is sent • **`keepalive`** - creates a connection at startup, then sends any data over the existing connection

Deleting an output

To delete a data input, select it from the **`All outputs`** list, as shown below:

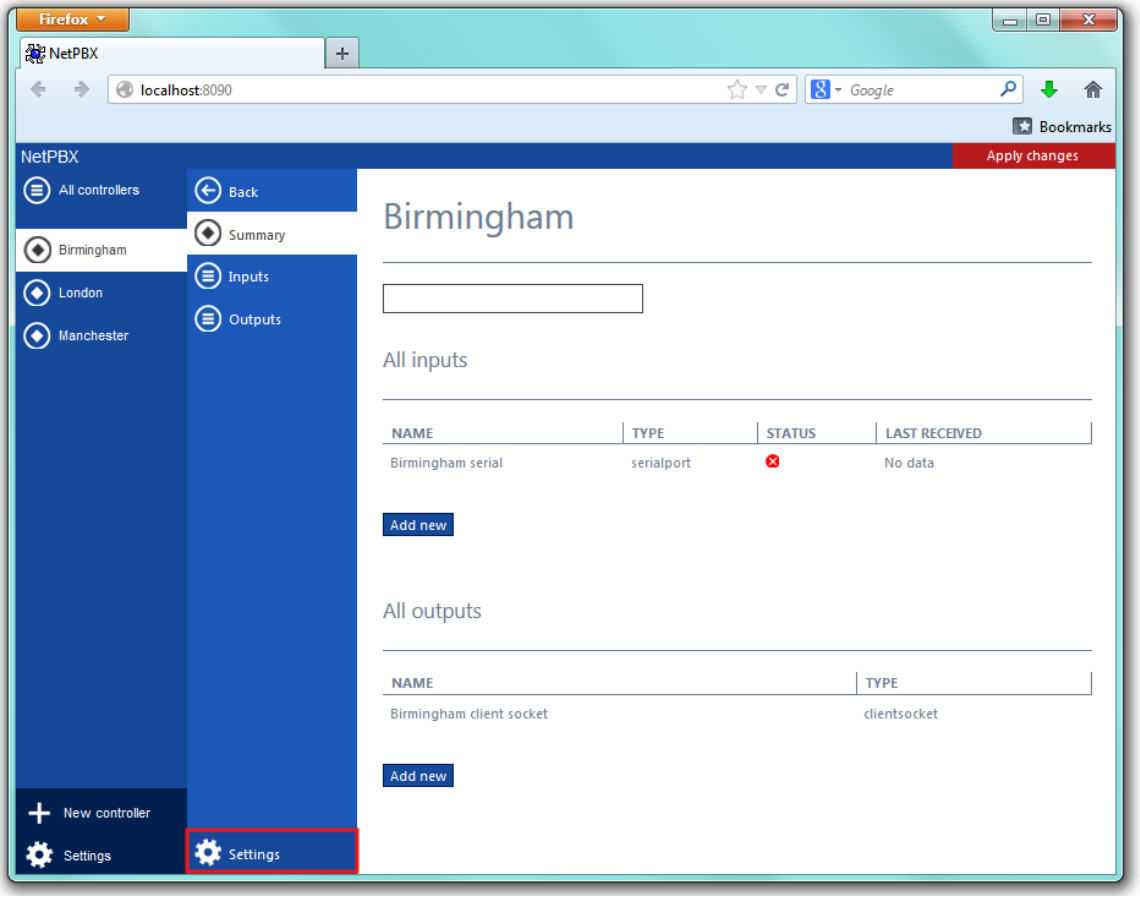


A new window will open on the right-hand side panel. Click on the Delete button to remove the output from the system, as shown below:

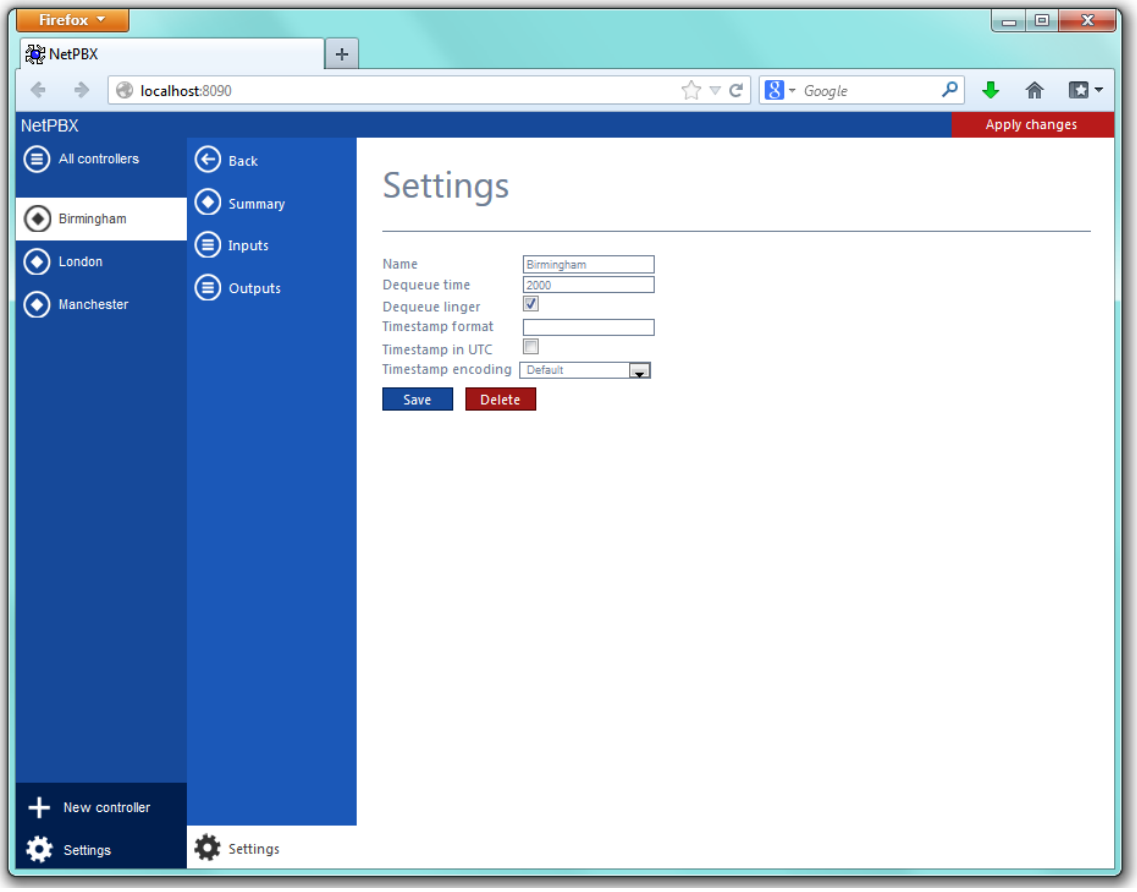


Settings

To configure the general properties of a controller, select it from the list of controllers and click on the Settings tab at the bottom-left corner of the screen, as shown below:



A new window will open, allowing you to edit the properties of the controller, as shown below:



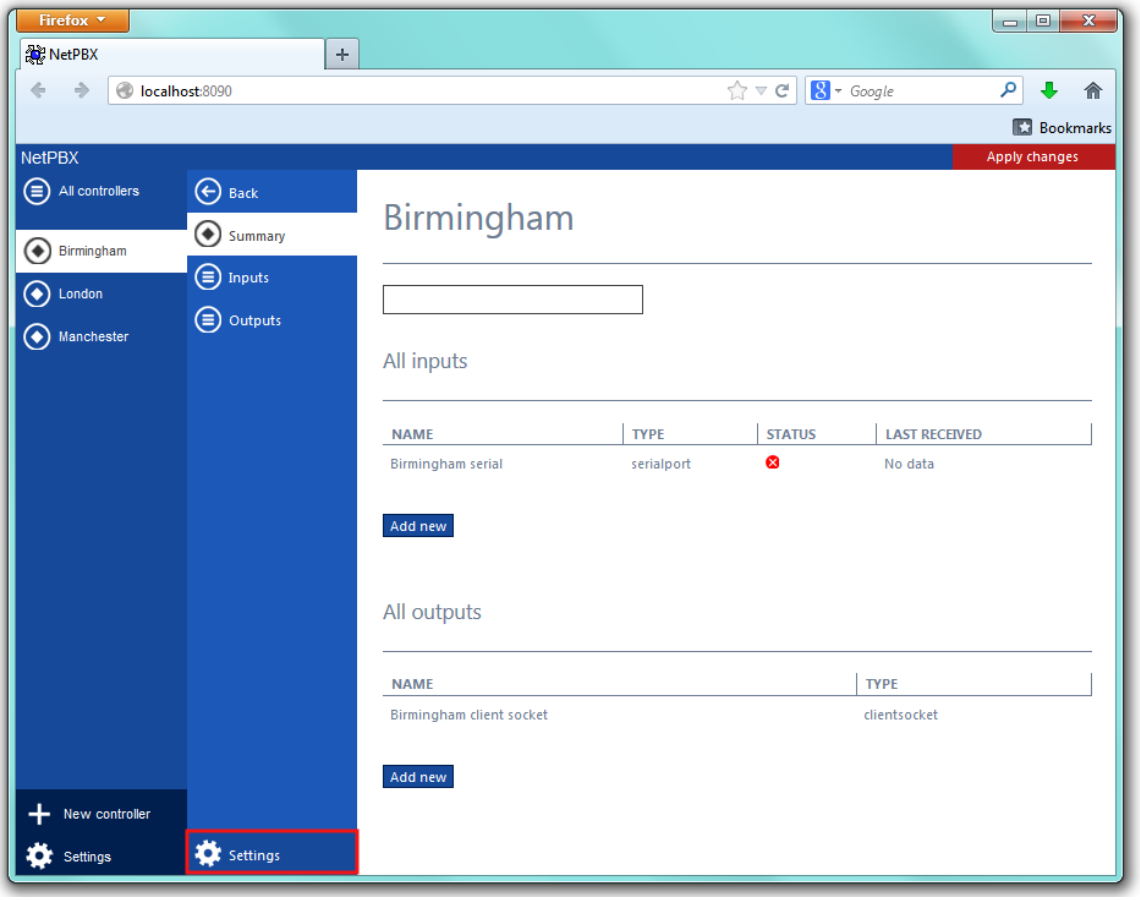
Each field in this section is described in the table below:

Field	Description
Name	The name of the controller
Dequeue time	The frequency (in milliseconds) that the controller's dequeue timer checks the data buffer
Dequeue linger	Determines whether or not the dequeue timer is reset whenever any input receives data
Timestamp format	Defines a string to place before every line of data when it is dequeued. The string can contain any or all of the following variables: `{year}` The current year, formatted as "yyyy" `{month}` The current month, formatted as "mm" `{day}` The current day, formatted as "dd" `{hour}` The current hour, formmated as "hh" `{minute}` The current minute, formatted as "mm" `{second}` The current second, formatted as "ss" `\r` Carriage return `\n` Line feed
Timestamp in UTC	Indicates that the UTC time should be used as the time stamp, rather than the local time (default)

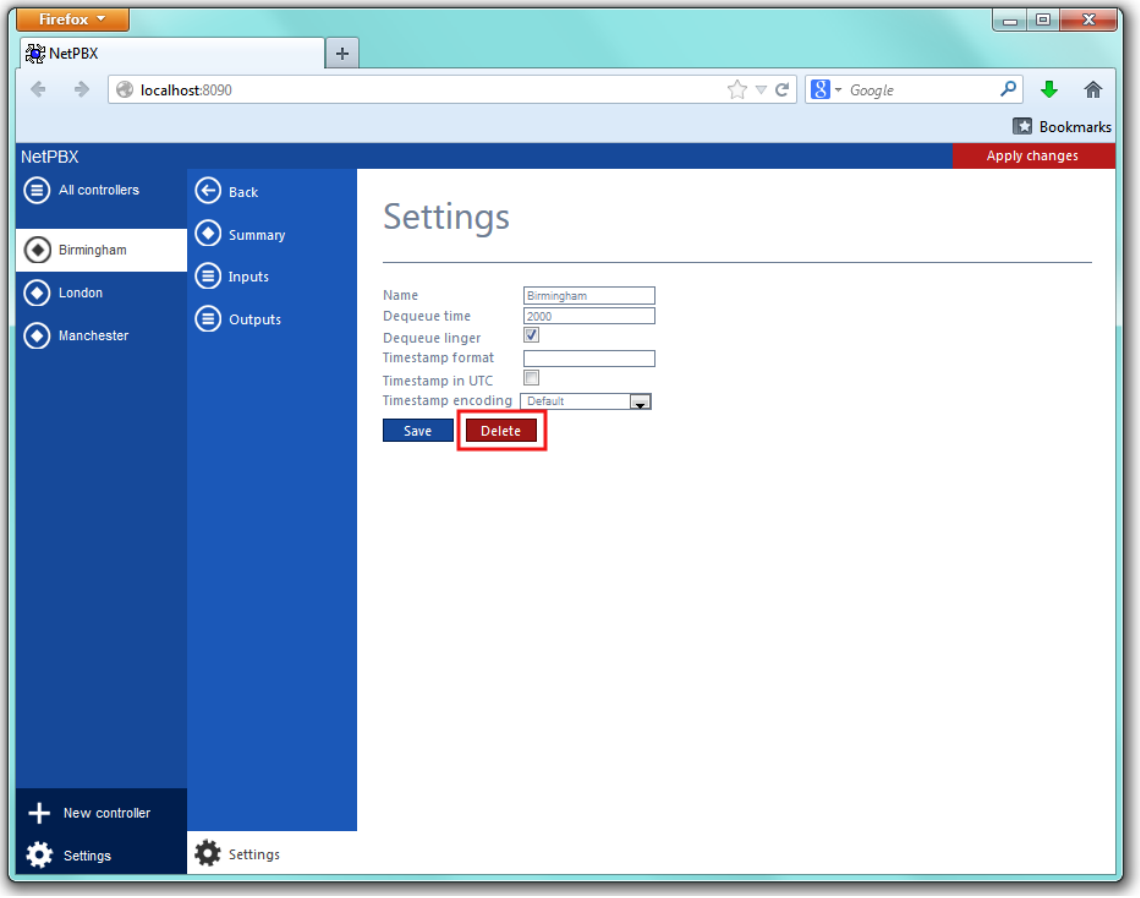
Timestamp encoding	Selects the type of encoding to use during conversion of byte array data to strings (and viceversa) when timestamping. The following values are accepted: `default` Use the operating system default `ascii` Use plain (7-bit) ASCII `unicode` Use Unicode double-byte encoding `utf8` Use UTF8 versatible encoding

Deleting a controller

To delete a controller, select it from the list of controllers and click on the Settings tab at the bottom-left corner of the screen, as shown below:

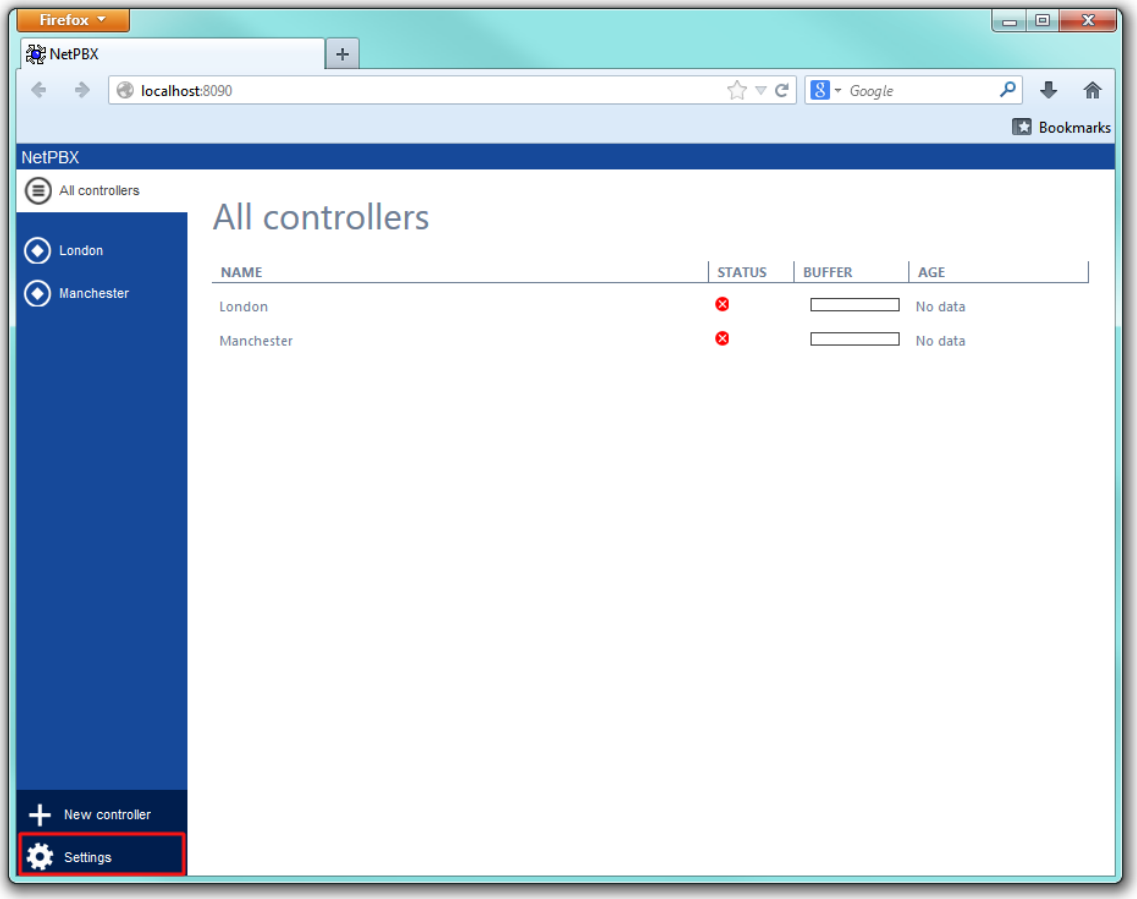


A new window will open on the right-hand side panel. Click on the Delete button to remove the controller from the system, as shown below:

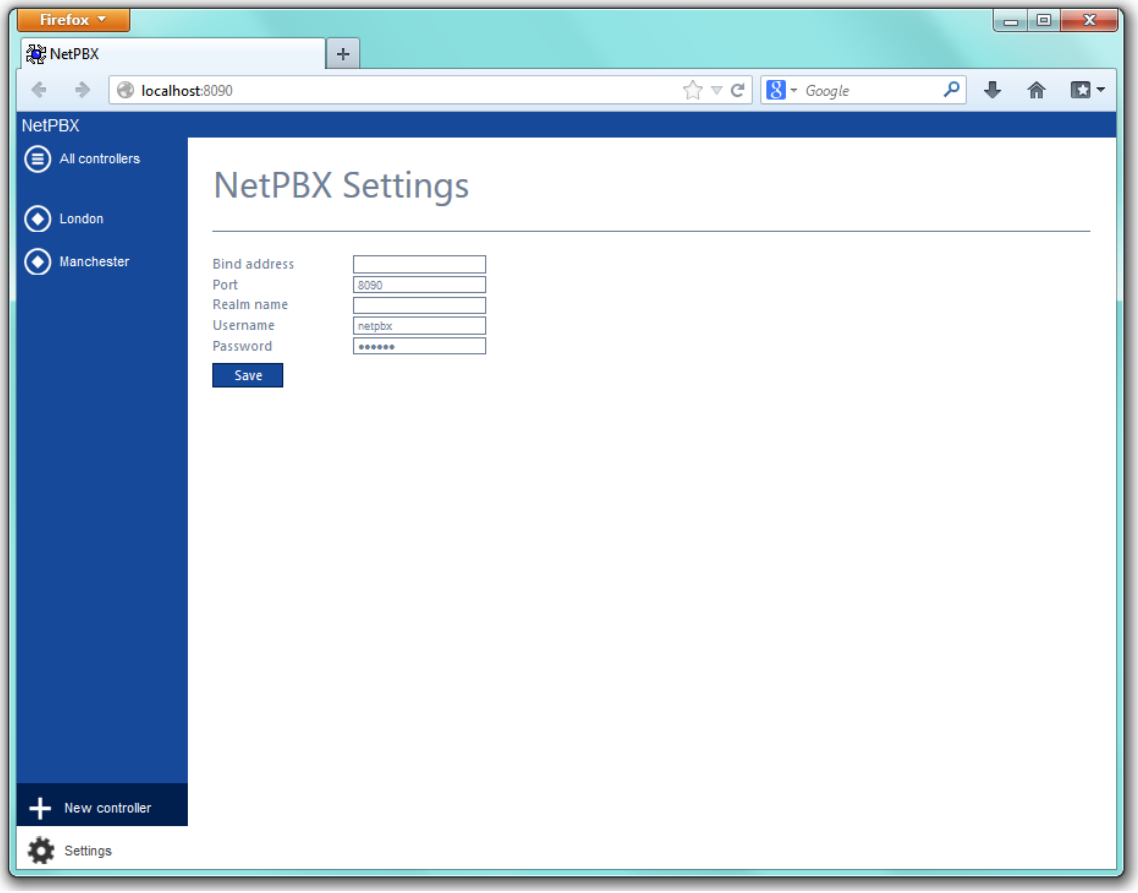


NetPBX settings

To configure the general properties of NetPBX, click on the Settings button from the main NetPBX screen, as shown below:



The **`NetPBX settings`** window will open, where you can configure its properties, such as IP address, port number or login credentials, as shown below:



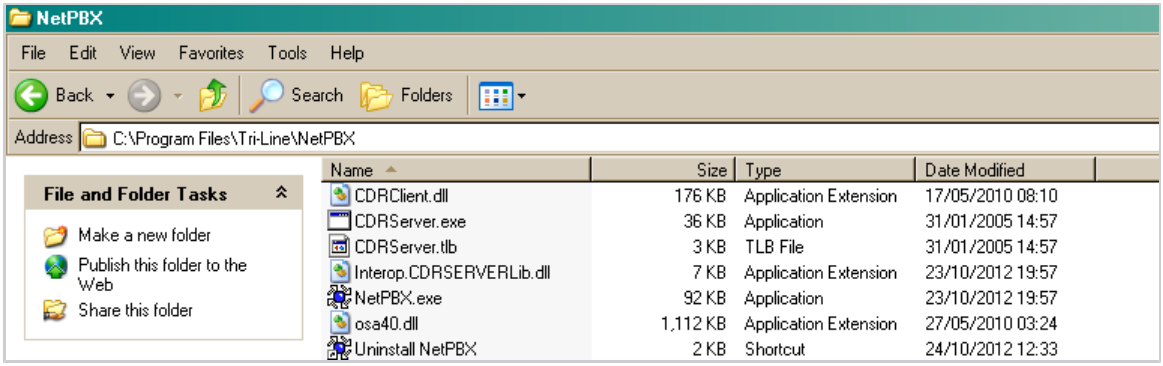
Field	Description
Bind	If the PC running NetPBX has more than one IP address, you can bind the web service to the IP address you want NetPBX to use.
Port	By default, NetPBX is running on port 8090. To change the port number, overtype the current entry.
Realm name	If your network uses realm names for routing and authentication, enter the realm name of the NetPBX service user account in the box provided.
Username	Enter a username that will used to login to NetPBX
Password	Enter a password that will be used to login to NetPBX

Knowledgebase

Connecting BCM v3.7 or below with NetPBX

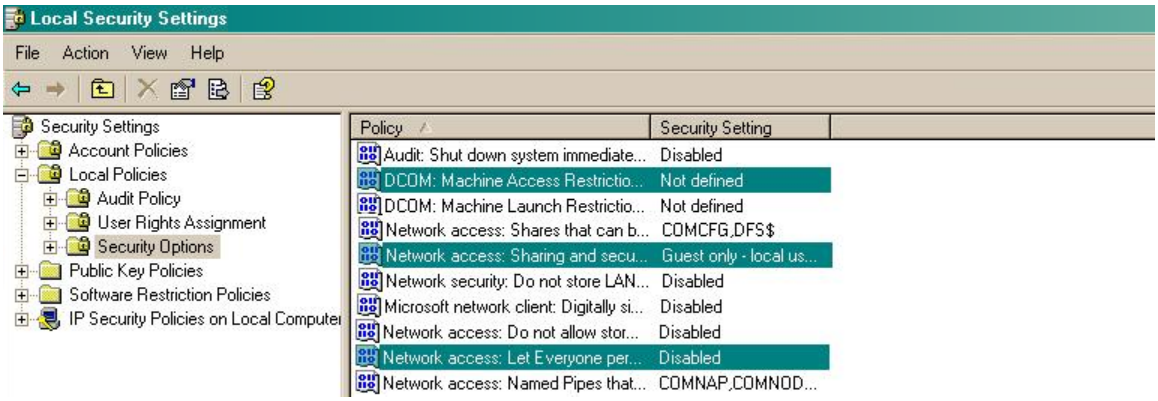
Follow the instructions below to connect a BCM v3.7 or below with NetPBX:

1. Make sure the **`CDRServer.EXE`** and **`Interop.CDRSERVERLib.dll`** files are placed in the same folder as **`NetPBX.EXE`**, usually located in **`{pf}\Tri-Line\NetPBX`**.

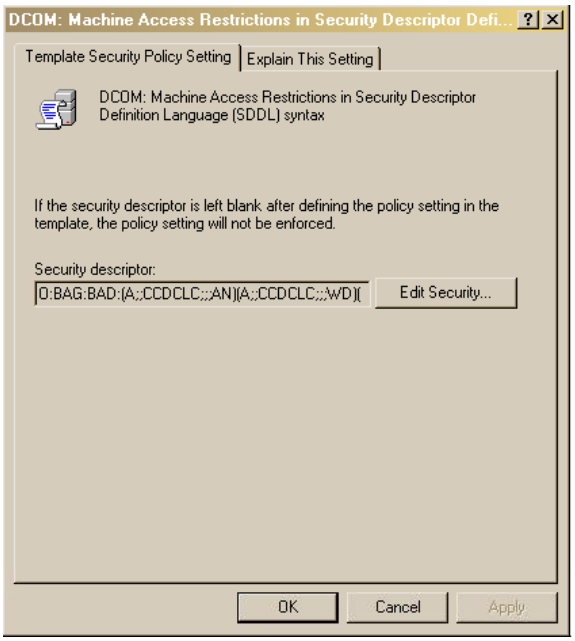


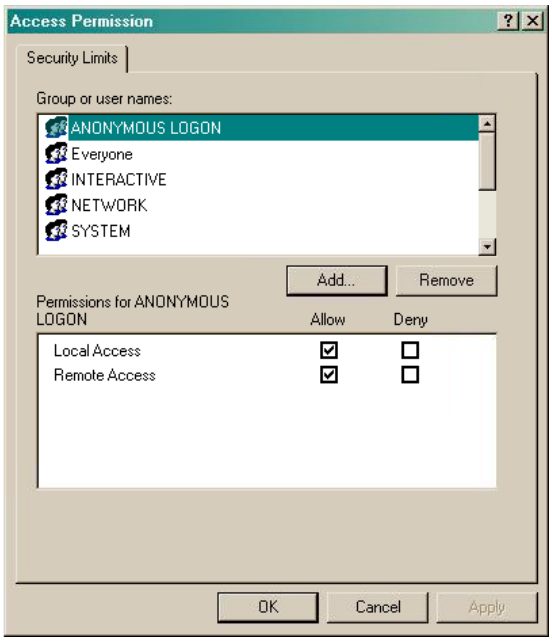
2. Register **`CDRServer.EXE`** by running the command line with administrator privileges and typing the following command under the directory path of the NetPBX folder: **`CDRServer.EXE/regserver`**.
3. Open the computer's local security policies: **`Start -> Control Panel -> Administrative Tools -> Local Security Policy.`**

4. Within the **`Security Settings\Local Policies\Security Options`** tree, change the following items as highlighted in the screenshot below:

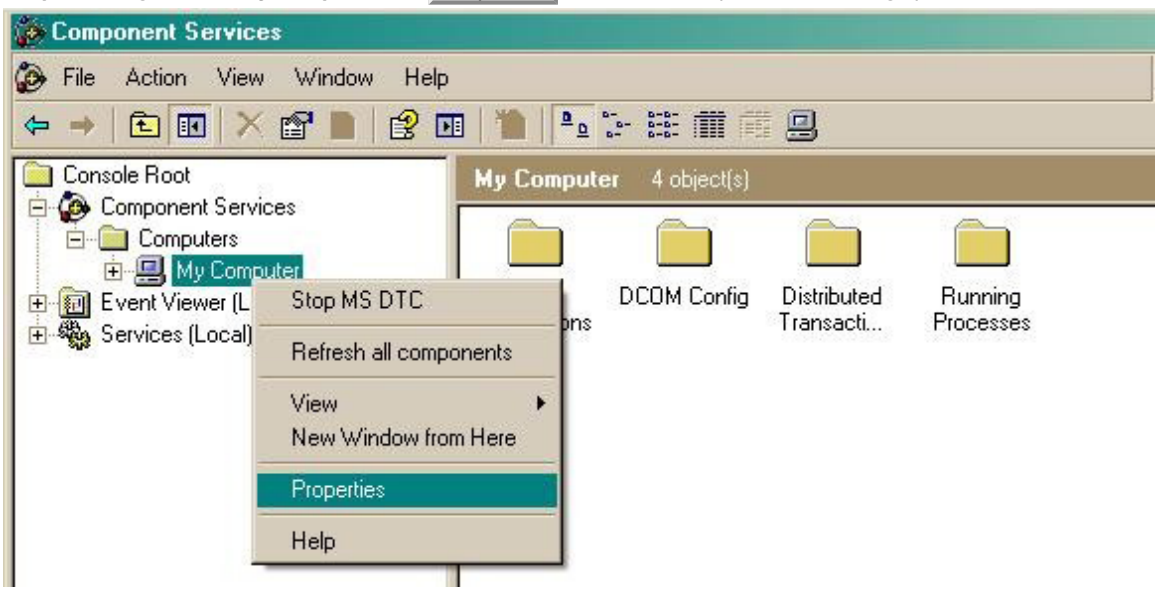


   a. **`Network Access: Let Everyone permissions apply to anonymous users`**. Set this to **`Enabled`**.
   b. **`Network Access: Sharing security model for local accounts`**. Set this to **`Classic`**.
   c. **`DCOM: Machine Access Restrictions`**: Click on Edit Security and add the following user accounts: **`Anonymous, Everyone, Interactive, Network, System`**. Set each one to have full access rights.



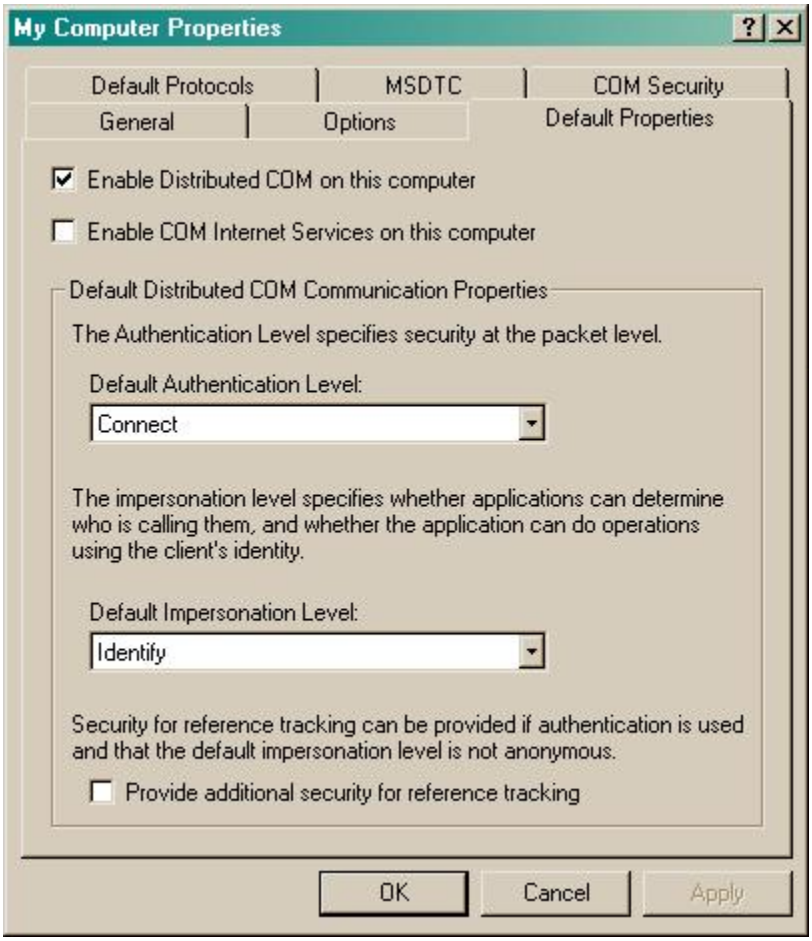


5. Next step is to modify the way DCOM behaves on the computer by executing the DCOM configuration program: **`Start`** -> **`Run -> DCOMCNFG [enter]`**. Browse the tree to the following location: **`Console Root -> Component Services -> Computers -> My Computer`**. Righ-click on **`My Computer`** for Properties and amend or update the following options:



   a. On the Default Properties tab:
   `Enable Distributed COM on this computer`: tick the box for his option
   `Default Authentication Level`: set this to **`Connect`**

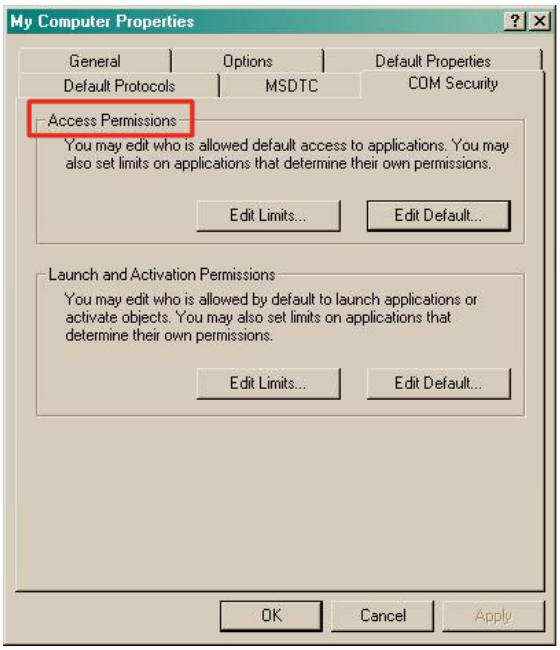
Default Impersonation Level: set this to **Identify**

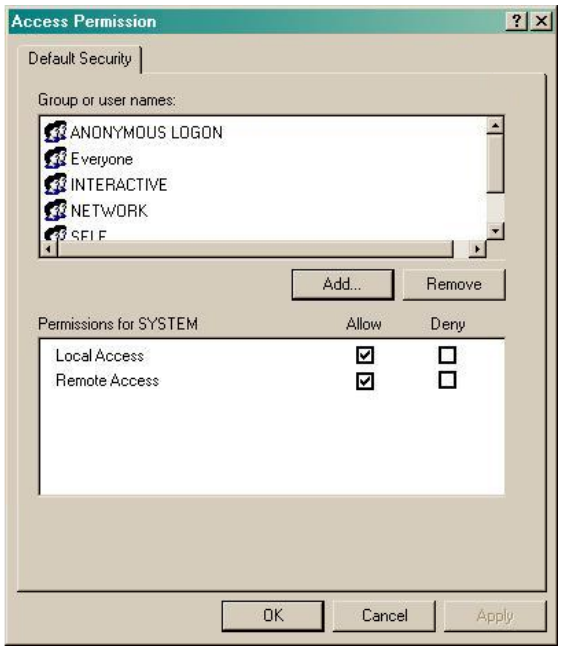


b. On the COM Security tab:

Go to the **Access Permissions** section and select Edit default .

Add the following accounts and set both local and remote access permissions: **Anonymous, Everyone, Interactive, Network, Local Service** and **System**.





Go to the **Launch and Activation Permissions** section and click on Edit default tab.

Add or update the following accounts to give them all local and remote access permissions: **Anonymous, Everyone, Interactive, Network, Local Service** and **System**.