

Solution Note: Configuring custom IP subnets on SpeedTouch routers running firmware 5.4

This document describes how to set up a SpeedTouch router to operate with a custom LAN subnet configuration scheme such as a private fixed IP address range with NAT, or a public IP address range with no-NAT.

Release 5.4 Templates

With the release of firmware version 5.4, Thomson introduces several new features to the SpeedTouch range including advanced TR-69 features, TR-64 support, WPA2, IGMP, BGP etc. The UK version of the SpeedTouch product includes two standard templates for Internet connectivity which are designed to make set up as easy as possible with the minimum amount of networking 'know-how':

The **Data (Default)** template features a NAT'ed configuration suitable for the vast majority of users wanting to share a standard broadband connection across multiple PC's, Mac's, Games Consoles etc. This template will issue attached devices a LAN IP address in the 192.168.1.x range.

The **Data (Custom)** template allows configuration of the SpeedTouch routers NAT / no-NAT setting, LAN IP address range and the use of DHCP or static IP addressing. This document describes this template in detail.

Use of the Data (Custom) template

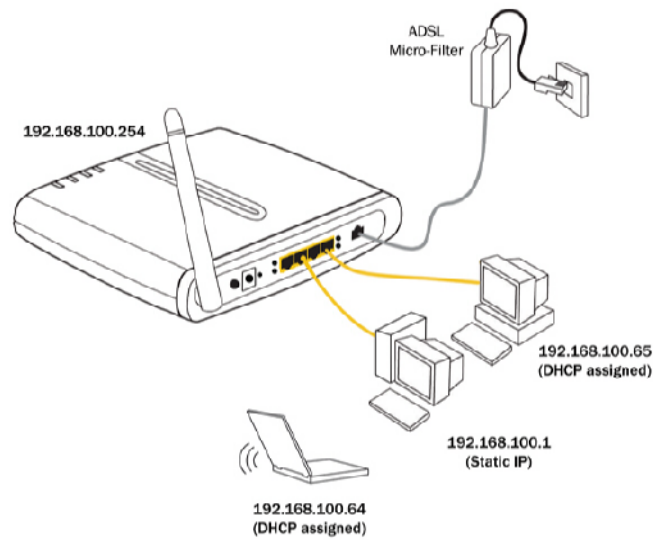
When using the **Data (Custom)** template to change the IP configuration it is important to have the complete IP address information to hand so as to be sure the right values are entered correctly in the dialogue boxes of the setup wizard template.

If you plan to use an IP address range specified by yourself rather than one allocated by your service provider it is essential to configure the SpeedTouch with Network Address Translation (NAT) to hide this IP address range from being broadcast towards the Internet. This Private address range is typically in the range 192.168.x.x.

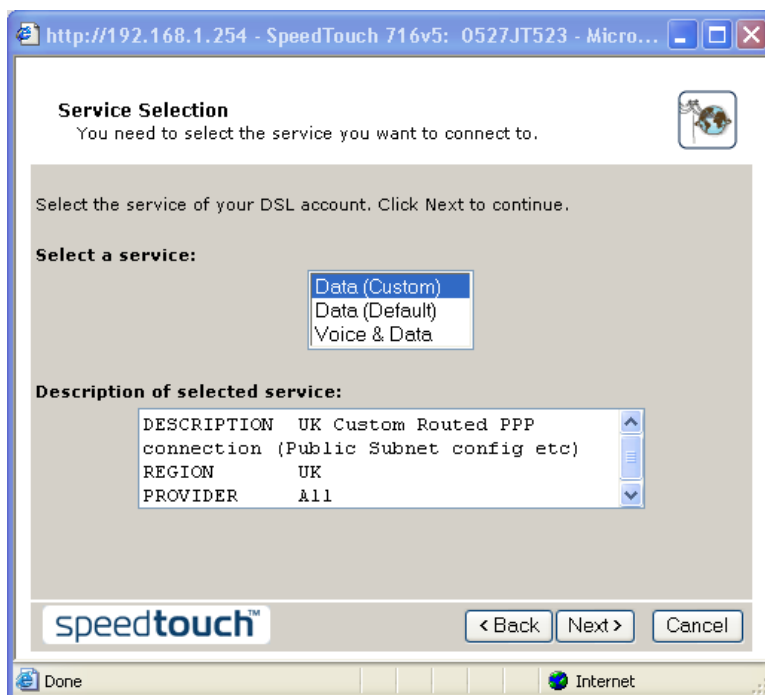
Example custom NAT address scheme

IP Range	192.168.100.0	192.168.100.255
Router IP	192.168.100.254	
Other usable IPs	192.168.100.1	192.168.100.253
Subnet Mask	255.255.255.0 or /24	

For this example lets say it has been decided that the router should only allocate IP addresses from 192.168.100.64 to 192.168.100.253 via DHCP and the other addresses should be available for Static address assignment.



The information would be entered in the setup wizard screens like this...



Choose the **Data (Custom)** "service" - select **Next>**

Choose the relevant UK “service provider” settings and “connection type” and then enter your ADSL user name and password – select **Next>**

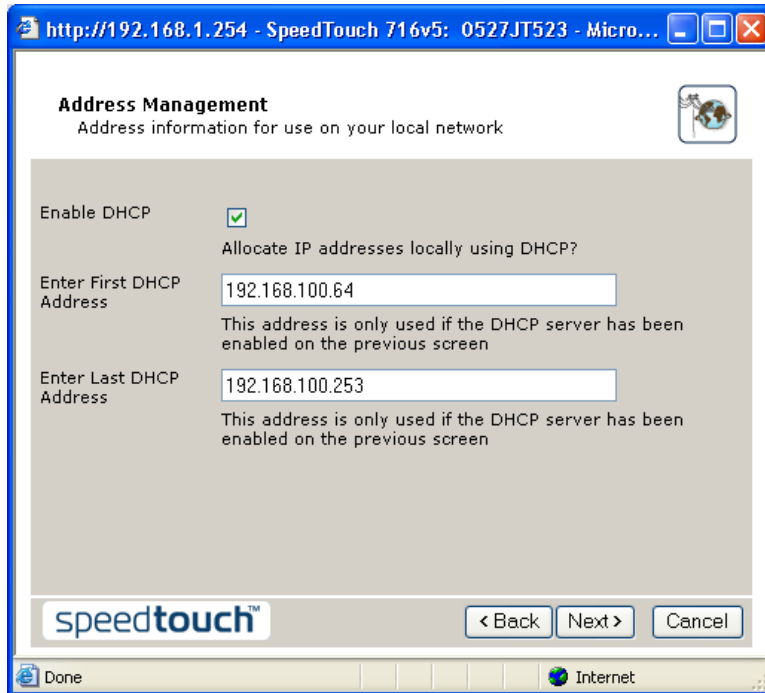
The LAN Addressing Scheme remains on “**Private(with-NAT)**”

The Router IP address is filled in SpeedTouch address box

The “Ethernet Subnet” is the Network Address or the very first IP address from the IP range it is not a usable IP address but is used for “routing” purposes. This is NOT the Subnet Mask

The “Ethernet Mask” is the subnet mask

Once completed – click **Next>**



This screen deals with configuration of the SpeedTouch DHCP settings.

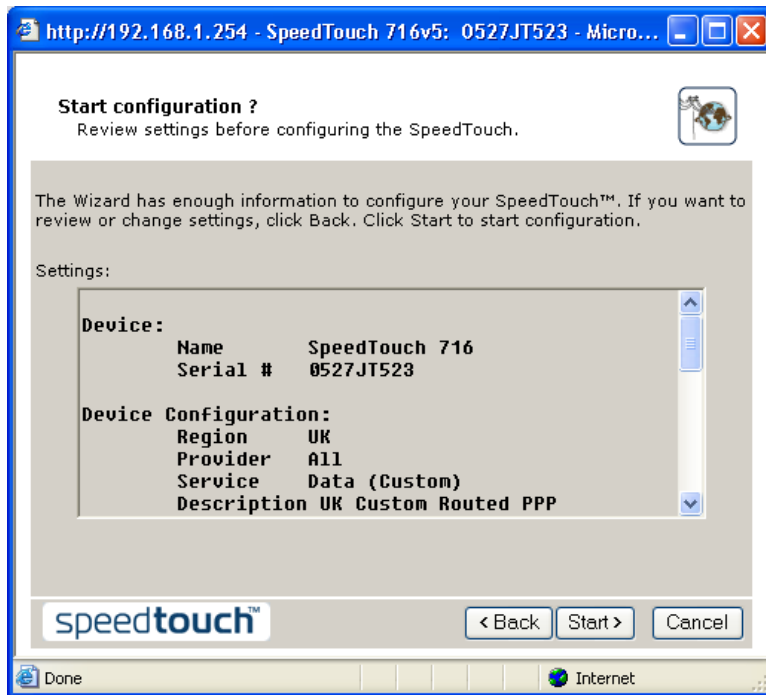
You can enable or disable the DHCP server function of the SpeedTouch by means of the check box.

Enter the first and last usable IP address in the DHCP range. In this case 192.168.100.64 and 192.168.100.253

NOTE: make sure to only include addresses from the usable address range and do not include the address of the SpeedTouch itself !!

You can choose not to use the full range of addresses available if you want to include static IP addresses in your LAN – but this is actually best handled by using the permanent IP address assignment option within the SpeedTouch rather than using the traditional static assignment option. (see the SpeedTouch User Guide for more details)

Even if you don't enable the DHCP server, it is a good idea to fill in the address ranges so if you do want to enable it later the information is already populated in the SpeedTouch configuration. Once complete – click **Next>**



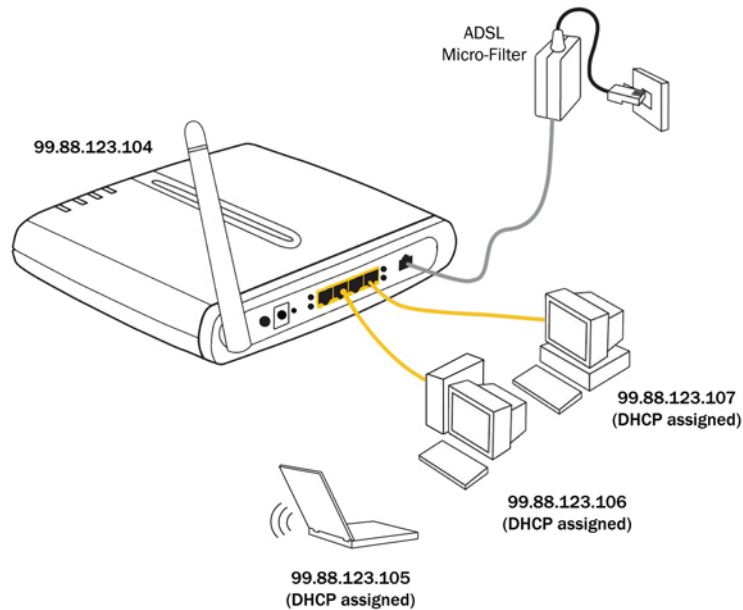
This screen shows a summary of the settings chosen. If all the settings are correct select **Start**>

The configuration will take approx 1 minute to complete after which a successfully completed screen will be shown.

You should close this screen and refresh your PC's IP address if the address of your PC is to be allocated by DHCP. Alternatively if using static address management change the PC's address manually to the correct static IP address.

Example Non-NAT Public Subnet address scheme

This example walks through the configuration of the SpeedTouch with a block of eight IP addresses provided by a service provider. Such an IP address allocation is known as a /29 (slash 29) subnet.

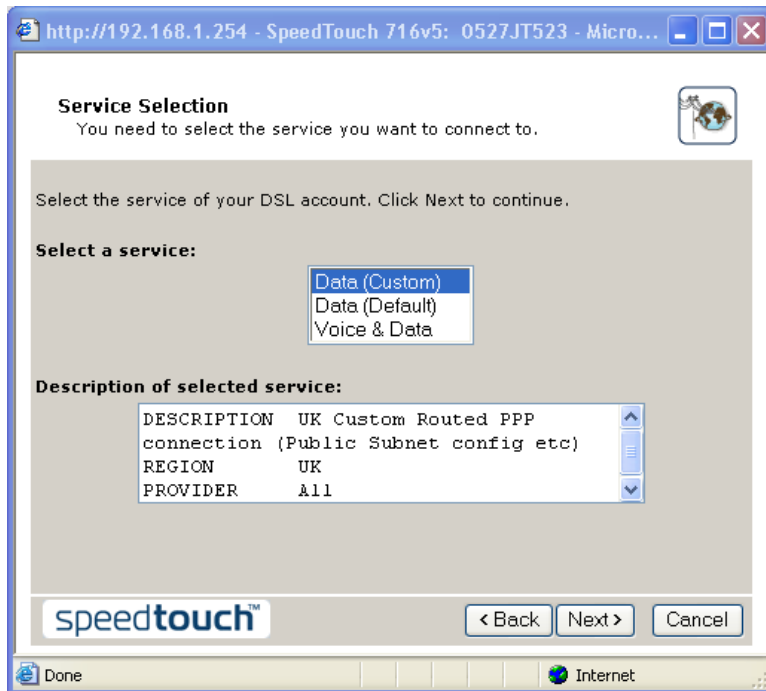


Note: The table below shows an example IP address range only. This IP address range should not be used to configure your SpeedTouch. If you are using a Public Subnet configuration the IP address information will be provided by your ISP.

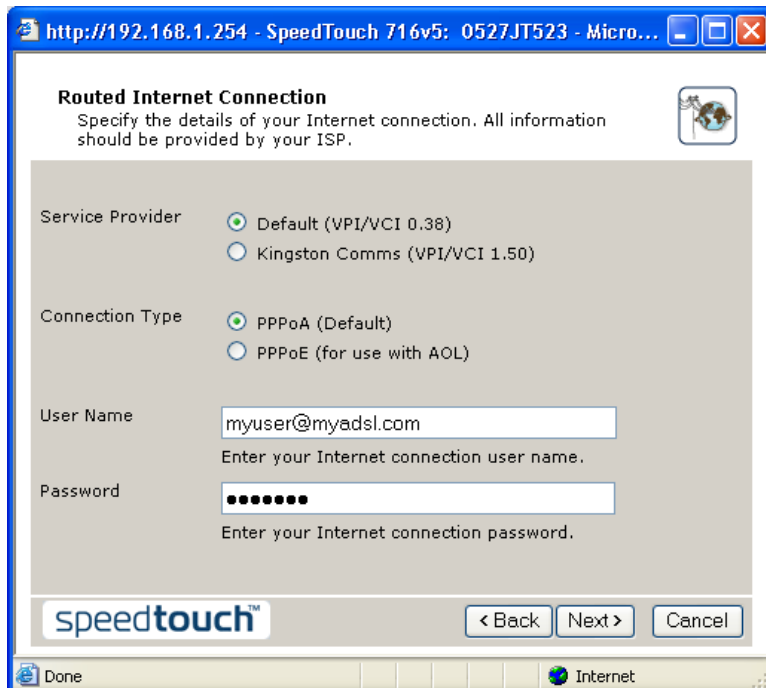
IP Range	99.88.123.104	99.88.123.111
Router IP	99.88.123.110	
Other usable IPs	99.88.123.105	99.88.123.109
Subnet Mask	255.255.255.248 or /29	

Particular attention should be given to the IP address that should be assigned to the Router. Also the first IP address in the complete range – the so called “network address”. In the case of a /29 subnet only 6 IP addresses are usable and one of these has to be assigned to the router itself.

Note: at the end of the configuration the IP address of the router will change so you may lose communication with the router until you refresh or reconfigure the IP address settings used on your PC.s



Select **Data (Custom)** from the service list – select **Next>**



Select the correct UK service provider settings and enter the broadband user name and password as provided by your service provider. – select **Next>**

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Router Addressing
Enter the Router IP address information. This information may have been provided by your Internet Service Provider.

LAN Addressing Scheme: **Public(without-NAT)**
Specify the appropriate IP address option for your SpeedTouch

IP address of your SpeedTouch: 99.88.123.110
Note: Add this as the default gateway on any static PC clients.

Ethernet Subnet: 99.88.123.104
Enter the subnet.

Ethernet Mask: 255.255.255.248
Enter the subnet mask.

speedtouch™ < Back Next > Cancel

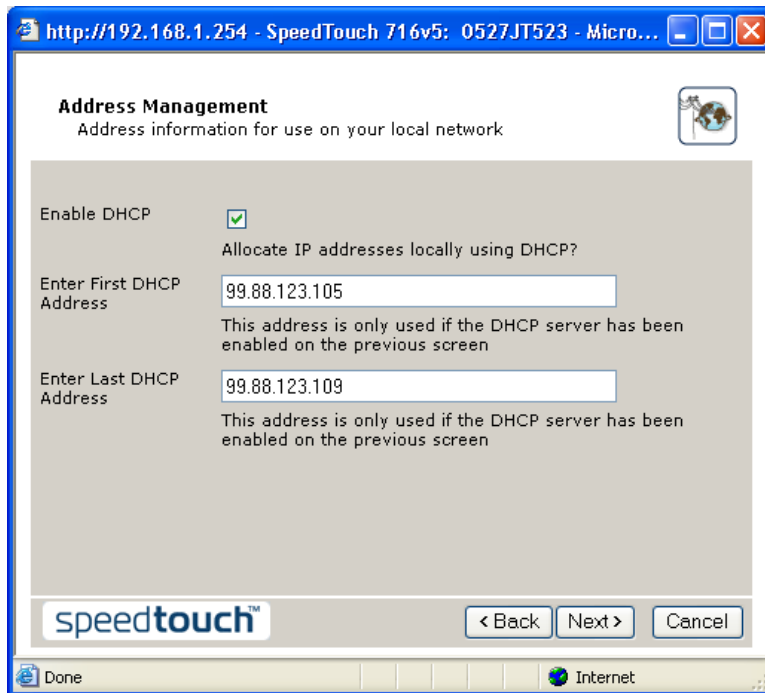
Select “**Public(without-NAT)**” from the LAN Addressing Scheme drop down box

Enter the “Router” IP address as specified by your ISP.

Enter the Network IP address – the very first IP address of your subnet

Enter the subnet mask

Select **Next>**

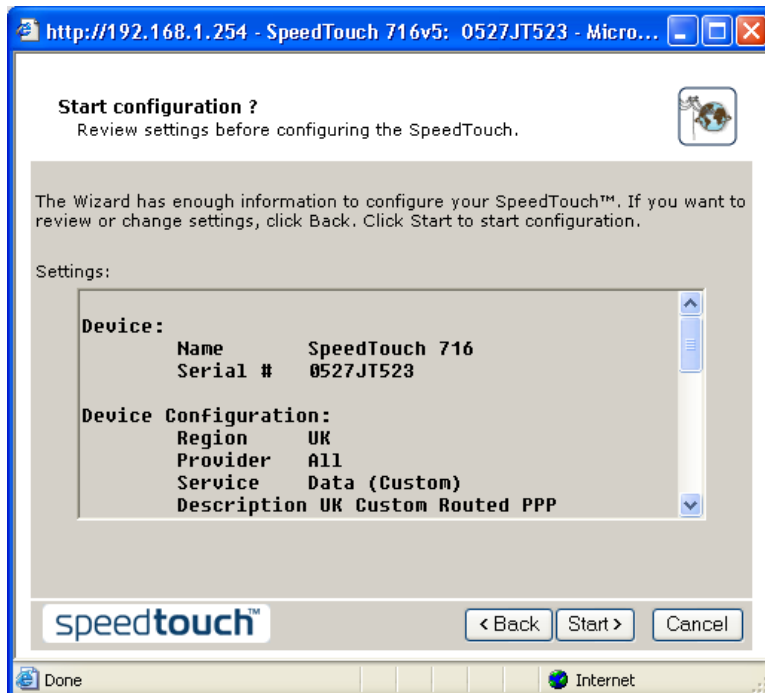


Select if you want the DHCP server enabled on the router (recommended)

Enter the first IP address to be allocated by the DHCP server

Enter the last IP address to be allocated by the DHCP server

Select **Next>**



This screen shows a summary of the settings chosen. If all the settings are correct select **Start>**

The configuration will take approx 1 minute to complete after which a successfully completed screen will be shown.

You should close this screen and refresh your PCs IP address if the address of your PC is to be allocated by DHCP. Alternatively if using static address management, change the PC's address manually to the correct static IP address.

To access the web GUI of the SpeedTouch after configuration you can either...

Continue to use the default IP address 192.168.1.254 (this is still allocated as a secondary LAN IP address), Use the new router IP address, or Use the host name <http://speedtouch.lan> so long as you still have the DHCP server enabled and/or the SpeedTouch address is configured as the DNS server for your PC.

For latest product information visit us at www.speedtouch.co.uk. Thank you for making SpeedTouch part of your Broadband experience.