budii™

User Manual

Table of Contents

Budii™ Overview

Storage
Lights up if you've connected an external USB hard-drive.

The iiNet Budii™, with handset and tablet in charging position. Can also be charged in separate chargers supplied by iiNet.

ADSL Sync and Internet
Lights up when Budii's Internet connection is working.

Wireless 2.4GHz
Lights up when Budii's standard wireless network is ready for wireless devices to connect.

Handset Charge and Tablet Charge
Shows that your iiNet handset or tablet is charging.

Wireless 5GHz
Shows Budii's 5GHz Celeno wireless feature is ready for connections and fetchtv.

Answering Machine
Shows the number of phone messages waiting for you.

Wired
Indicates when Budii's wired (Ethernet) ports are in use.

LED Options
Personalise Budii's icon colour.

Phones
Displays your active Netphone phone lines.

ADSL Internet
Phone cable plugs into this port and connects Budii™ to the Internet.

WPS
Set up wireless computers easily and securely.

Wired
Seven super-fast Gigabit Ethernet ports. There's also a dedicated port for NBN/FTTH when available in your area.

Find and Pair
Press the Pair button to pair your iiNet DECT handset or tablet with Budii™; or press Find to locate an already paired device.

Storage
For external USB hard drives for sharing photos, music and documents.

Wireless On/Off
For peace of mind, turn Budii's wireless on or off when not in use.

3.5mm Audio Out
Stream Internet radio to a set of speakers, or connect your home amp and listen to music directly from the Internet.

PSTN
Hook up your home telephone line to Budii™, if you want to answer calls using your iiNet handset.

Netphone
Plug in a secondary handset if you want to receive calls on a standard telephone.

Logging in to Budii™

Before continuing, you'll need to log in to Budii™.

To log in to Budii™:

1. Open a web browser on your computer.
2. In the address bar, enter Budii's IP address[1] - the default is 10.1.1.1 - and press Enter. It may take a while to load, so please be patient.
3. At Login, enter Budii's modem password[2]. The default is admin.
4. Click Log in.

Welcome to iiNet Budii

Login

Enter the modem password; default is "admin"

[   ]

[Login]

[1]Each computer on a network has a set of numbers that tells other computers where to find it so they can communicate. This is called an IP address. An IP address has four groups of up to three digits, separated by dots, like this: 123.45.67.012

[2]Your modem password is Budii's admin password. By default, it's set to "admin". This password gives you access to Budii's settings.

Navigating Budii's Setup Interface

QUICK ACCESS BUTTONS

| Log out | Diagnostics | Security log | ADSL status |

iinet budii connect better

| 1. Wizard | 2. Set up my wireless | 3. Set up my VOIP | 4. Configure my USB Port | 5. Advanced Settings | 6. Handy Tools | 7. Status / Diagnostics |

TABS

Set up my wireless

A. Set up my wireless

B. Set up my wireless distribution

C. Set up MAC address filter

SECTIONS

Set up my wireless

Refresh | Save Settings

ON | Toggle wireless function

Wireless Network

Click one of the **tabs** across the top of Budii's interface to get to a particular setup section:

| 1. Wizard | 2. Set up my wireless | 3. Set up my VOIP | 4. Configure my USB Port | 5. Advanced Settings | 6. Handy Tools | 7. Status / Diagnostics |

Each tab may have multiple sections, accessed by clicking in the navigation bar on the left-hand side of the screen:
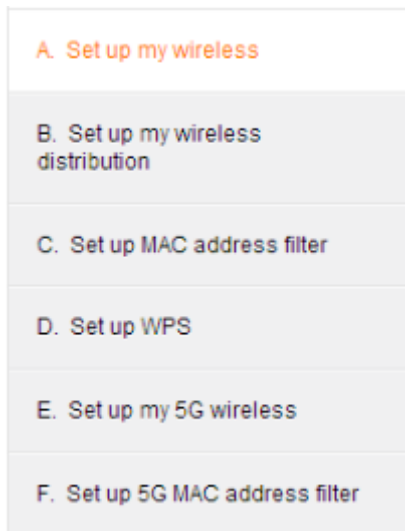
There is a row of quick-access buttons in the top-right for commonly used features:

A. Set up my wireless

B. Set up my wireless distribution

C. Set up MAC address filter

D. Set up WPS

E. Set up my 5G wireless

F. Set up 5G MAC address filter

Log out | Diagnostics | Security log | ADSL status

The Budii™ Setup Wizard

The first thing you'll see once you log in is your setup wizard.

Wizard   Refresh   Save Settings

ADSL setting

1. My ADSL username is

   Budii

2. My ADSL password is

   ••••••••••••••

3. My WAP IP address is

   0.0.0.0

iinet budii
connect better   1. Wizard

ABOUT THE SETTINGS ON THIS PAGE

ADSL[3] Setting

ADSL username:
The username you chose when you set up your service with us.

ADSL password:
The password assigned to you, found in your welcome email.

WAN IP address:
Budii's IP address when viewed from the outside world. Other computers on the Internet use this IP address to send data through Budii to your computer.

ADSL setting

1. My ADSL username is

   Budii

2. My ADSL password is

   ••••••••••••••

3. My WAN IP address is

   123.123.65.12

⊘ **If you have fetchtv, you won't see the ADSL username and password options.**

ADSL Status

Line Status:
Tells you whether your service is up and running.

Line Mode:
Tells you the ADSL standard you're using to connect to the Internet.

ADSL status

Line Status
Online

Line Mode:
Automatic

[3]ADSL stands for Asynchronous Digital Subscriber Line. It is a popular broadband Internet service provided over the telephone line.

VoIP settings

VoIP stands for Voice over Internet Protocol, which is just a fancy way of saying "making phone calls over the Internet". VoIP lets you make phone calls using your Internet connection instead of your land line or mobile phone service.

iiNet offers only one VoIP line - Line 1 on this setup page.

VoIP phone line 1 username:
If you set up a VoIP service with iiNet, enter the VoIP number we gave you. You'll find this information in your welcome email.

VoIP phone line 1 password:
The password assigned to you when we set up your VoIP service - also in your welcome email.

You'll also need to select the Australian **State** you're living in.

VoIP Setting

1. Line 1: [VoIP Registration: Idle]

2. my VoIP phone line 1 username is:

3. my VoIP phone line 1 VoIP password is:

4. Line 2: [VoIP Registration: Idle]

5. my VoIP phone line 2 username is:

6. my VoIP phone line 2 VoIP password is:

7. select the state you are in: NSW

USING THE BUDII™ SETUP WIZARD

> ⊘ **Before setting up your broadband Internet connection, you'll need to know whether you're using ADSL or FTTH/NBN (Fibre to the Home/National Broadband Network).**

To set up Internet access with ADSL[4]:

1. Enter your ADSL username and password.
2. Budii™ knows its own IP address - this is filled out automatically and can't be changed, so skip over this setting.
3. Click Save Settings.

To set up Internet access with FTTH[5]/NBN[6]:

1. At Modem is currently configured for, select FTTH/NBN from the dropdown box.
2. Scroll back up to Configure Port and choose the LAN[7] port you've connected to your FTTH box.
3. Leave the Connection mode as Dynamic.

Modem Configure

1. Modem is currently configured for:

   [FTTH/NBN ▾]

---

[4]ADSL stands for Asynchronous Digital Subscriber Line. It is a popular broadband Internet service provided over your telephone line.

[5]FTTH stands for Fibre to the Home. It's a broadband service that works by running optical fibre right up to your house.

[6]NBN is Australia's planned National Broadband Network. Its aim is to gradually replace services that run over the phone system (such as ADSL) with optical fibre and satellite Internet services.

[7]A LAN (Local Area Network) is a private network, usually set up to connect the computers in a single home or office. For our purposes, your LAN is your home network.

Configure Port

1. Select your port

   LAN1 ▾

2. Connection Mode

   Dynamic ▾

To set up VoIP using the wizard:

1. At VoIP Settings options 2 and 3, enter your VoIP username and password.
2. From the State dropdown box at option 7, select the state you're in.
3. Click Save Settings.

MODEM RESTART

From this page, you can also do a modem restart if you need to.

> ⓘ **Remember that when you restart Budii™, you may need to wait up to five minutes for it to come back online.**

To restart Budii™:

1. At Restart your modem, click Continue.
2. Click OK.
3. Budii™ will come back online - it could take around five minutes, so please be patient.

Changing Budii's admin password

You can change Budii's password under 5A: Modem Password and Remote Management.

iinet budii connect better	1. Wizard	2. Set up my wireless	3. Set up my VOIP	4. Configure my USB Port	5. Advanced Settings	6. Handy Tools	7. Status / Diagnostics

Advanced settings

Modem password & remote management

Refresh   Save Settings

A. Modem password & remote management

Remote management means you can access your modems settings from any computer connected to the internet, this setting is disabled by default. Once enabled anybody that has your modems IP address can access your modem setup pages if they have you modem password. Therefore we strongly suggest you alter the default

> ⚠ **Budii's default password is "admin" – not hard to guess, so we recommend you change it, especially if you're going to enable remote management.**

ABOUT BUDII'S PASSWORD

Budii's modem password[8] gives you administrative access to your modem so you can set up things like wireless encryption, access control and the other features described in this manual.

Changing Budii's password won't affect your iiNet ADSL password[9]. The folks at iiNet can't store your modem password anywhere - so if you do change it, make sure you pick something you'll remember. You may need to log in later to reconfigure Budii's settings.

A good password:

- is at least nine characters long
- contains at least one letter and one number
- contains both uppercase and lowercase letters
- is not based on your iiNet username
- is not based on your family or given names
- is memorable to you - if you forget Budii's admin password, the only way to access Setup is to reset Budii™ to factory settings.

[8]Your modem password is Budii's admin password. By default, it's set to "admin". This password gives you access to Budii's settings.
[9]When you sign up for ADSL, you'll get a username and a password. These details prove your identity to iiNet.

CHANGING BUDII'S PASSWORD

To change Budii's password:

1. Click the 5. Advanced Settings tab.
2. From the navigation bar on the left, click A. Modem Password & Remote Management.
3. At Modem Password, enter a new password.
4. At Confirm Password, enter the new password again.
5. Click Save Settings.

Modem password

1. Enter a new password to login to your modem

We suggest a combination of lower and upper case letters and numbers

2. Confirm password

Budii's password has been changed.

RESETTING BUDII'S PASSWORD

If you forget your password, you can reset it to the default ("admin") by resetting Budii™ itself. See Resetting Budii™ to factory settings. Be aware that this will reset all of Budii's configuration settings, so you'll need to go through the setup process again.

CHANGING THE AUTOMATIC LOGOUT TIME LIMIT

For security, Budii™ will automatically log you out of the administration pages after 10 minutes.

To change the automatic logout time limit:

1. Click the 5. Advanced Settings tab.
2. From the navigation bar on the left, click A. Modem Password & Remote Management.
3. At Modem Password option 3, enter the number of minutes after which you want Budii™ to automatically log you out. (To turn off automatic logout, enter 0.)
4. Click Save Settings.

> 3. Enter a time for the modem to automatically log out (in minutes)
>
> 10
>
> Enter "0" for no auto–logout

Your automatic logout time limit has been changed.

Setting up wireless

Use this page to configure Budii's wireless home network.

Wireless lets you connect any wireless-enabled device to your home network and to the Internet without network cables.

Basic wireless setup is covered in your Wireless Setup Guide, so if all you need to do is get online, have a read through that first.

This manual helps you to:
- Turn Budii's wireless features off and on.
- Set up a second wireless network.
- Change Budii's wireless channel, mode and bandwidth settings.
- Change Budii's wireless security settings, including wireless passphrases.
- Hide or broadcast your home network's SSID.

TURNING WIRELESS ON OR OFF

If you won't be using Budii's wireless features, you might want to disable them.

To disable Budii's wireless features:
1. Click the 2. Set up my wireless tab.
2. From the navigation bar on the left, click A. Set up my wireless.
3. Click Toggle Wireless Function.
4. Click Save Settings.

ON   Toggle wireless function
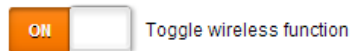
SECURING YOUR WIRELESS NETWORK

Budii™ comes with wireless security set up for your primary wireless network using WPA2 (Wi-Fi Protected Access) in Personal mode, but you can change this if you want to.

You'll need to work through this section if you enable a secondary SSID[10].

You can also use this section to configure wireless security for legacy devices that don't support the more modern security methods.

To secure your wireless network

Budii™ lets you configure the security options for your primary and secondary SSIDs separately. To switch between the security options for your primary and secondary SSIDs, use this dropdown box:

Security Options

Primary SSiD

1. ○ Disable

2. ○ WEP ?

[10]SSID stands for Service Set Identifier. It can also be seen as the name of your local wireless network. All computers and devices using your home wireless network need to be using this same SSID in order to connect.

1. Click the 2. Set up my wireless tab.
2. From the navigation bar on the left, click A. Set up my wireless.
3. At Security Options, select an SSID (primary or secondary).
4. Select a wireless security scheme:
   - **Disable** - removes all security features and leaves your wireless network accessible to anyone.
   - **WEP** - stands for Wired Equivalent Privacy. This is the oldest wireless security scheme, and we don't recommend using it - so if your wireless devices all support WPA, use that instead.
   - **WPA/WPA2-PSK** - stands for Wi-Fi Protected Access - Pre-Shared Key (personal mode). We encourage you to use this option. It's more secure than WEP and works well for home networks.
   - **WPA/WPA2-802.1x** - an enterprise wireless security scheme that works with an authentication server.
5. Use one of the following tables to help you complete the options for the wireless security scheme you chose.
6. Click Save Settings.

Security Options

Primary SSID ▾

1. ● Disable

2. ○ WEP ❓

3. ○ WPA/WPA2-PSK ❓

4. ○ WPA/WPA2-802.1x

WEP security options

> ⚠ Only use these options as a last resort. WEP is not a reliable method for securing a wireless network.

WEP mode	You can choose whether to configure WEP security in 128-bit or 64-bit mode. • 64-bit WEP - lets you define 10 of the characters in your wireless encryption key. It's not as secure as 128-bit WEP. • 128-bit WEP - lets you define 26 characters in your wireless encryption key. It's more secure than 64-bit WEP, so only use 64-bit WEP if you have a wireless device that needs to work in this mode.
Key entry method	Choose Hex to enter keys as hexadecimal digits (0-9 and A-F). Choose ASCII to enter keys as ASCII characters.
Keys 1 - 4	You can have up to four WEP keys. When you connect your devices to your home network, you need to enter the same information as you enter here, so that Key 1 on Budii™ matches Key 1 on your wireless device, and so on.
Default Key ID	Choose one of the keys you defined above to act as the default key that Budii™ will use to encrypt wireless data.
Passphrase	As an alternative to configuring keys, tick the box and type a passphrase.

WPA/WPA2-PSK security options

Pre-shared key type	If you select passphrase here, you'll need to enter a phrase between eight and 63 characters in length. Budii™ will generate a 256-bit key from it.
	We don't recommend setting your wireless passphrase to be the same as your ADSL password.
	You also have the option to enter the key yourself in the form of 64 hex digits. Choose Hex to do this.
Pre-shared key	If you chose passphrase for your pre-shared key type, enter a passphrase here. If you chose hex, enter 64 hex digits to represent your 256-bit key.
Show Pre-shared key	Un-tick this box to hide the characters in the pre-shared key.

WPA/WPA2-802.1x security options

Re-authentication period	After being connected for this amount of time, the session will time out and your computer will automatically create a new session by re-authenticating with Budii™.
Server-IP	The IP address of your authentication server.
Server-port	The port the authentication server uses for authentication requests.
Secret Key	The key you'll use to prove your identity to the authentication server.

HIDING SSIDS

Under the setup options for your Primary and Secondary SSIDs, you'll see an option to Hide SSID. This prevents Budii™ from broadcasting its SSID[11], also known as a wireless network name.

Some people choose to disable SSID broadcast as an extra security feature. However, this does add a few extra steps to the process of connecting your computers and devices to Budii's wireless network. If you choose to hide either

Wireless Network

1. ☑ Enable primary SSiD

2. Hide SSiD ☐ Budiiprimary3AABB1

3. ☑ Enable secondary SSiD

4. Hide SSiD ☑ Budiisecondary3AABB1

[11]SSID stands for Service Set Identifier. It can also be seen as the name of your local wireless network. All computers and devices using your home wireless network need to be using this same SSID in order to connect.

your primary or secondary SSID, refer to your operating system help for instructions on connecting to a wireless network without a broadcast network name.

SETTING UP A SECONDARY WIRELESS NETWORK SSID

Budii™ lets you set up an extra wireless network. This could be useful if, for example, you wanted to let visitors to your house use the Internet while protecting your home computers. To set this up, enable the secondary SSID (network name) and configure the network. Here's how:

To set up a secondary wireless network

1. Click the 2. Set up my wireless tab.
2. From the navigation bar on the left, click A. Set up my wireless.
3. In the Wireless Network section, tick Enable secondary SSID.
4. Tick Hide SSID if needed. See Hiding SSIDs for more information on this option.
5. Rename the secondary wireless network if you want to, by typing in a different SSID.
6. Click Save Settings.

CONFIGURING WIRELESS PROTOCOL AND CHANNEL OPTIONS

Budii™ supports the 802.11n, 802.11g and 802.11b wireless protocols. It also lets you

- Choose which of these protocols devices can use to connect to your network
- Change the wireless channel that traffic will travel on in your home network
- Change the bandwidth of your wireless network.

To configure wireless protocol and channel options

1. Click the 2. Set up my wireless tab.
2. From the navigation bar on the left, click A. Set up my wireless.
3. Under Wireless Network, at the Channel dropdown, pick a channel for the secondary network, or leave the dropdown on Auto and Budii™ will choose a channel for you.

> **You'll need to choose a specific channel if you are setting up a wireless distribution system (WDS).**

4. At Mode, select a Wireless Protocol[12].
5. At Bandwidth, if you selected 802.11n or 802.11n + 802.11g + 802.11b at Mode, you can change the Bandwidth[13] of your wireless network.
6. Click Save Settings.

5. Channel

Auto ▾

6. Mode

802.11n + 802.11g + 802.11b ▾

7. Bandwidth

20MHz/40MHz ▾

[12]A wireless protocol is a standard used by the makers of wireless technology to specify how wireless communications should work. You might see wireless protocols mentioned, such as 802.11 or 802.11g and so on.

[13]Bandwidth is not quite the same as connection speed, but it's a related concept. If you imagine your Internet connection as a pipe through which data must travel to get to your computer, it's easy to see that a bigger pipe (i.e. a higher bandwidth) allows for, but won't guarantee, better download speeds. Different broadband technologies offer different bandwidths, and hence a different potential speed for your Internet connection.

Wireless Troubleshooting

Many factors can affect wireless performance, including a device's distance from Budii™, the layout of your building, and interference from other radio signals.

Follow these steps if:
- Budii's wireless network performance is slow.
- Devices lose wireless Internet or network connectivity.
- You have trouble connecting devices to Budii's wireless network.

To troubleshoot Budii's wireless network performance:
- Check your wireless settings. Remember that all devices on the wireless network must use the same settings as you've configured for Budii™, including security protocols and passphrases.
- Make sure you have the correct details for your SSID (wireless network name) and passphrase.
- Budii's wireless feature must be set to On to enable wireless networking.
- Try moving a device closer to Budii™ to see if the wireless signal is stronger in certain places.
- If your wireless signal is weak in certain places in your home, you could consider boosting your network signal with a wireless extender.
- Changing the wireless channel might help to avoid interference.

Set up wireless distribution

With a WDS (Wireless Distribution System) you can extend your wireless network with more access points. WDS is convenient because you don't need to link the extender access points with a wired (Ethernet) connection.

SETTING UP A WIRELESS DISTRIBUTION SYSTEM (WDS)

To use Budii's WDS you'll first need to set up your wireless network to use a specific channel. By default, Budii™ is set to choose a channel for you automatically, so see Configuring wireless protocol and channel options for instructions on how to select a specific channel.

There are three things you'll need to do to set up a WDS:

1. Choose a wireless channel - follow the instructions at Configuring wireless protocol and channel options.
2. Install your wireless access points - see the vendor documentation to do this.
3. Set up WDS on Budii™.

Once you've chosen a channel and installed your wireless access points, use the following instructions to set up the WDS on Budii™.

Setting up WDS on Budii™

To set up WDS:

1. Click the 2. Set up my wireless tab.
2. From the navigation bar on the left, click B. Set up wireless distribution.
3. Click Toggle wireless distribution function and set it to On.
4. At AP MAC Address Table, find the wireless access points you installed and tick Enable next to each one.

> If your access points don't appear in the AP MAC Address Table, try clicking Scan for access points. If you still can't see them listed, use the vendor documentation for your wireless access points to troubleshoot things like network interference and distance from Budii™.

5. Click Save Settings.

ON | Toggle wireless distribution function

AP MAC Address Table (up to 4 APs)

Scan For Access Points

SSID   MAC Address   Enable

Connect an iPad to Budii's wireless network

> If you've set up your wireless network to hide its SSID[14], these instructions won't apply. For easy wireless setup on your iPad, make sure SSID broadcast is enabled.

To connect an iPad to Budii's wireless network:

1. From your iPad's home screen, press Settings.
2. From the Settings menu, select Wi-Fi. Your iPad searches for available wireless networks - this may take a few minutes.

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[14]SSID stands for Service Set Identifier. It can also be seen as the name of your local wireless network. All computers and devices using your home wireless network need to be using this same SSID in order to connect.

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3. At Choose a network, press Budii's home network.

Wi-Fi Networks	
Wi-Fi	ON
Choose a Network...	
Budiiprimary3AABB1	🔒 � 〉
Other...	〉

4. Enter your Wireless Password[15].

Enter Password	Cancel
Password	
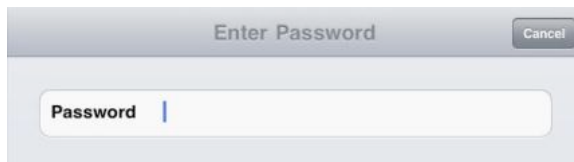
Your iPad connects to Budii's home network, shown by the tick next to the network name. You're now free to start a web browser and surf the Internet.

Wi-Fi Networks	
Wi-Fi	ON
Choose a Network...	
✓ Budiiprimary3AABB1	🔒 � 〉
Other...	〉
Ask to Join Networks	ON

[15] Your wireless password is the passphrase set up for connecting to Budii's wireless network. This is different from your ADSL password - see the Setting up Wireless section for more information.

Connect an Android device to Budii's wireless network

> If you've set up your wireless network to hide its SSID[16], these instructions won't apply. For easy wireless setup on your Android device, make sure SSID broadcast is enabled.

To connect an Android device to Budii's home network:

1. Access your device's Settings menu. Depending on your version of Android, this may be located in the Applications menu, or accessible from the main menu of your device.

> On some versions of Android, you may need to press Wireless and Networks first.

2. Press Wi-Fi.
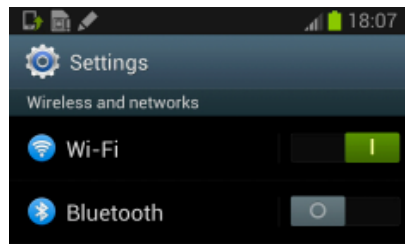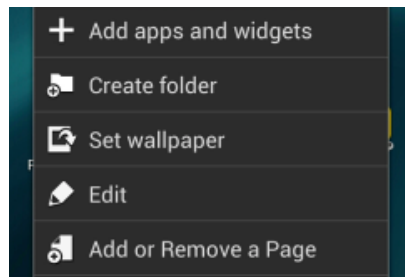
[16] SSID stands for Service Set Identifier. It can also be seen as the name of your local wireless network. All computers and devices using your home wireless network need to be using this same SSID in order to connect.

3. Press to turn on Wi-Fi, if it's not already enabled.
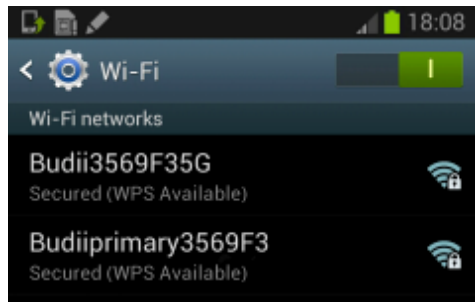
4. From the list of available wireless networks, select Budii's home network name.
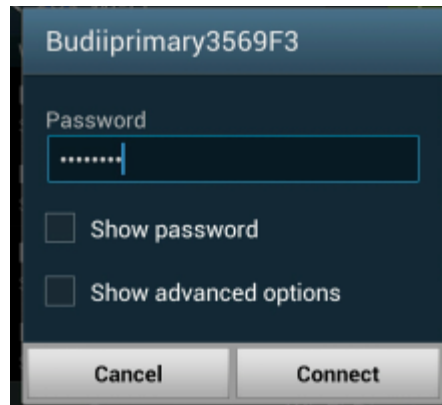
5. Enter your Wireless Password[17] and press Connect.

Your Android device establishes a connection to Budii™ - you're now free to close the Settings menu, start a web browser and surf the Internet.

Set up MAC address filter

iinet budii	1. Wizard	2. Set up my wireless	3. Set up my VOIP	4. Configure my USB Port	5. Advanced Settings	6. Handy Tools	7. Status / Diagnostics

Set up my wireless

Set up MAC address filter   Refresh | Save Settings

A. Set up my wireless

B. Set up my wireless distribution

C. Set up MAC address filter

D. Set up WPS

Each individual computer on your Network has a unique MAC address, which is a series of numbers and letters that identify a computer on your network. By entering this unique number in the table below you can allow or disallow only those computers with their MAC address listed to connect to your wireless network. Once you enter the MAC address of your computer/s, please be sure to enable MAC filtering by selecting the icon to the right.

[ON] Toggle MAC address filtering

[YES] Allow the computers listed below to access my wireless network?

ABOUT THE MAC ADDRESS FILTER

There are two ways to use Budii's wireless network MAC Address[18] filter:

- List the computers you want to allow access to your network, and block everyone else. If you only have a couple of computers on your home network and you're fairly certain they won't change, this might be the easiest way to use the MAC address filter. This feature is also useful if you think you'll have trouble finding the MAC address of a computer you want to block.

- List the computers you want to block, and allow everyone else. Don't worry, they'll still have to get past the other security features you configured while setting up your wireless. This might be the way to go if you only want to block one or two computers, and you know you'll be able to get their MAC addresses.

[18]A MAC address, also known as a physical address, is a way of identifying a computer as a unique piece of hardware. When data travels across a network, each packet of data contains a destination MAC address. If this matches your computer's MAC address, the data gets through to your computer.

Here's what you'll need to do:

1. Decide whether you want to block the computers you list, or allow them.
2. Find out the MAC addresses of the computers you want to block or allow - see Finding a computer's MAC address. If the computers are currently connected to your wireless home network, you can skip this step since Budii™ will already know this information.
3. Set up the MAC address filter on your Budii™. See Setting up Budii's MAC address filter.

SETTING UP BUDII'S MAC ADDRESS FILTER

> ⚠ **To follow this process you'll need to know MAC addresses first, or the computers you're adding to the filter need to be visible on your home network.**

To set up the MAC address filter:

1. Click the 2. Set up my wireless tab.
2. In the navigation bar, click C. Set up MAC address filter.
3. Click Toggle MAC address filtering, setting it to On.
4. Select whether the MAC address filter should allow or not allow computers to access your wireless network.

| ON | Toggle MAC address filtering |

| YES | Allow the computers listed below to access my wireless network? |

> **If you want to allow the computers you list to access the wireless network, make sure you add your own computer.**

5. Enter the MAC addresses of the computers to be filtered by doing one of the following:
   - Follow the procedure to add MAC addresses to the table.
   - Type the MAC addresses into the empty rows in the My Computers table.
6. Click Save settings.

You've now successfully configured a MAC address filter.

My computers

1. Device 1

   | 90 | : | 55 | : | e1 | : | 21 | : | e4 | : | dd |

2. Device 2

   | 67 | : | da | : | a6 | : | e4 | : | 54 | : | dc |

3. Device 3

   | 00 | : | 00 | : | 00 | : | 00 | : | 00 | : | 00 |

To add MAC addresses to the table:

1. At the Wireless DHCP client list dropdown, find the computer you're interested in.
2. At the Copy to dropdown, choose a number that corresponds to an empty row in the My Computers table.
3. Click the Copy button. The computer's MAC address is pasted into the table.
4. Repeat these steps for other computers you want to filter, making sure you choose a new table row each time.

Set up WPS

iinet budii	1. Wizard	2. Set up my wireless	3. Set up my VOIP	4. Configure my USB Port	5. Advanced Settings	6. Handy Tools	7. Status / Diagnostics

Set up my wireless

Set up WPS ❓

Refresh

A. Set up my wireless

B. Set up my wireless distribution

There are 2 ways to connect a wireless computer to your network:

1. Personal Identification Number (PIN)
2. Push Button Configuration (PBC)

WPS (Wi-Fi Protected Setup) is a simple and secure way to connect computers and other wireless devices to Budii's wireless network. If your computer supports WPS, you have two easy options for getting connected:

- Use PBC (Push-button configuration).
- Use the wireless computer's PIN (Personal Identification Number) to identify it to Budii™

> ⚠ **To find out whether your computer can use WPS to connect to a wireless network, or to find out what your PIN is, see your computer's operating system help.**

To connect a wireless computer using PBC:

1. Click the 2. Set up my wireless tab.
2. Click D. Set up WPS.
3. Scroll to the Connect via Push Button Configuration section.
4. Push the WPS button on your wireless computer.
5. Within 60 seconds, click Connect.
6. If your device didn't connect, press Refresh and have another go.

Connect via Push Button Configuration

1. Press the push button on your wireless laptop

2. Within 60 seconds, **click the Connect button below**

Connect

To connect a wireless computer using a PIN:

1. Click the 2. Set up my wireless tab.
2. Click D. Set up WPS.
3. At Connect via a Personal Identification Number, enter your wireless computer's PIN.
4. Within 60 seconds, click Connect.
5. If your device didn't connect, press Refresh and have another go.

Connect via a Personal Identification Number

1. Enter the pin from your wireless PC

   1234

2. Within 60 seconds, **click the Connect button below**

   [Connect]

VoIP Setup

Set up your VoIP phone line

iiNet offers one VoIP phone line.

To view your VoIP phone line settings:

1. Click the 3. Set up my VoIP tab.
2. From the navigation menu on the left, click A. Set up phone line 1.

If you've done the Setup Wizard, your VoIP number and password should already be entered on this screen.

Everything else will be set up too, configured specially for iiNet.

VoIP Advanced Settings

This page contains advanced settings for configuring VoIP. We'll look at each section in turn:

- General Settings
- Advanced Call Features
- Voice Codec Configuration

To configure your VoIP advanced settings:
1. Click the 3. Set up my VoIP tab.
2. Click C. VoIP Advanced Settings.

GENERAL SETTINGS

We've included an explanation of these settings for advanced troubleshooting, but we strongly suggest you don't change anything here. All the options on this page are set up for iiNet's VoIP service, and if you change them, your VoIP might not work.

General settings

1. ☑ Support Call Waiting

2. ☑ Caller-ID Presentation

3. ☑ Support User-Agent Header

4. ☐ Support Out of Band DTMF

5. ☑ Use SRV option for SIP registration

6. ☐ Use SIP ALG option

7. Call Hold Version

   RFC3264 ▾

8. Telephony Hook Flash Timer

   50 ▾ ms ~ 250 ▾ ms

9. Telephony Tone Country Setting

   Australia ▾

10. VoIP SIP port

    5060

11. Re-Registrartion Time interval

    1800

- **Support Call Waiting** - Much like a standard telephone service, if you're on the phone, your VoIP service can tell you there's another call coming in with a series of beeps.
- **Caller-ID presentation** - Again, this feature works a lot like it does on standard telephone lines. If you have this enabled, Budii™ will show you the caller's phone number or VoIP name.
- **Support User-Agent Header** - Gives Budii™ permission to tell a SIP server about the hardware you're running.
- **Support Out of Band DTMF** - DTMF are the tones you hear when pressing buttons on the phone. Tones of different pitches (frequencies) act like commands to a telephone exchange. Sometimes, VoIP can distort these tones if they're sent in-band (that is, in the same stream of data as your voice).
- **Use SRV option for SIP registration** - An SRV record helps a VoIP system find your computer or device that's making a call with VoIP. Because VoIP works over the Internet, there's no guarantee your VoIP phone will have the same IP address all the time. This means that a VoIP system has to keep track of where your SIP address is at any given moment. The SRV option for SIP registration lets you have a public SIP address that directs traffic to your computer. This lookup system works a lot like email.
- **Use SIP ALG option** - This option is sometimes used when a NAT (Network Address Translation) routing setup is preventing VoIP from working.
- **Call Hold Version** - Defines what standardised method Budii™ should use to put calls on hold.
- **Telephony Hook Flash Timer** - This setting controls the timing of the "hook flash" button for call waiting.
- **Telephony tone country setting** - Different countries use different frequency tones to control calls.
- **VoIP SIP Port** - See the Glossary entry on Ports for more information. SIP is the protocol that sets up and completes VoIP call connections. Its default port is 5060.
- **Re-registration time interval** - When you register your SIP address with a server where you can be contacted by VoIP, this registration expires. This setting controls when your registration expires. Bear in mind, however, that the SIP registrar might have a different re-register interval that could override yours.

ADVANCED CALL FEATURES

Advanced Call Feature

1. ☐ Do Not Disturb Enable

2. Call forwarding number

   [   ]

3. ☐ Forward unconditionally

4. ☐ Forward on "busy"

5. ☐ Forward on "no answer"

- **DND - Do not disturb** - Sets a VoIP line to not ring.
- **Call Forwarding** - Forwards your VoIP calls to another number. There are three options for forwarding:
    - Forward unconditionally - Always forward VoIP calls to this number
    - Forward on "busy" - Forward the call whenever the caller gets a "busy" signal
    - Forward on "no answer" - Forward the call when the phone rings out before you pick up.

VOICE CODEC CONFIGURATION

Your voice is an analogue signal, whereas computers need to send digital information - ones and zeroes. A voice codec is a standardised piece of software for converting your voice into ones and zeroes so your computer can send it. Budii™ supports a few methods for doing this.

VoIP Port Advanced Settings

iinet budii connect better	1. Wizard	2. Set up my wireless	3. Set up my VOIP	4. Configure my USB Port	5. Advanced Settings	6. Handy Tools	7. Status / Diagnostics

Set up my VOIP

Port advanced settings

Refresh Save Settings

A. Set up phone line 1

B. Set up phone line 2

C. VoIP advanced settings

D. Port advanced settings

E. Dial plans

F. Quick Dial plans

G. Call history

H. DECT settings

Enter the related properties for the port to achieve better behavior.

Phone DECT

1. Volume Gain Control

   Input: 10 / Output: 10

2. ☑ Enable VAD (Voice Activity Detection)?

3. Inter Digit Delay

   3 Sec.

   (The delay time before processing the dialed digits)

Your VoIP port can be finely configured for better performance. Some commonly used settings are:

Volume gain control
If you're having trouble hearing or being heard in VoIP calls, change the volume gain of your handsets. Adjust input volume to make your voice louder or softer; adjust output volume to make the other person's voice louder or softer. -10 is the lowest volume, while 10 is the highest.

VAD
VAD (Voice Activity Detection) helps conserve bandwidth by only transmitting audio data when Budii™ detects that you're speaking.

Inter digit delay
After the delay time entered here, your Budii™ handsets will assume you've finished entering digits.

VoIP dial plans

iinet budii connect better	1. Wizard	2. Set up my wireless	3. Set up my VOIP	4. Configure my USB Port	5. Advanced Settings	6. Handy Tools	7. Status / Diagnostics

Set up my VOIP

Dial plans

Refresh   Save Settings

A. Set up phone line 1

B. Set up phone line 2

C. VoIP advanced settings

D. Port advanced settings

E. Dial plans

PSTN override code

Some telephony providers offer a cheaper call when you prefix the phone number you are calling with a set of digits, please contact your provider to see if they offer this service (iiNet do not offer this as a service).

1. PSTN Override Code

⚠ **iiNet does not offer a PSTN override code, so you can skip this section when configuring VoIP dial plans.**

DIALLING PLANS

The Dialling Plans section lets you add phone numbers and decide how Budii™ will handle outbound calls to these numbers - that is, call them through your VoIP line or through the standard telephone service (PSTN).

To access the VoIP dial plan settings:

1. Click the 3. Set up my VoIP tab
2. From the navigation bar on the left, click E. Dial plans.
3. At the Dialling Plans section, enter a phone number.
4. At Connection Type, select VoIP or PSTN. You may also select Block to prevent calls from the number.
5. Click Add.
6. Click Save Settings.

Quick dial plans

	1. Wizard	2. Set up my wireless	3. Set up my VOIP	4. Configure my USB Port	5. Advanced Settings	6. Handy Tools	7. Status / Diagnostics
iinet budii connect better							

Set up my VOIP

Quick dial plans

Refresh Save Settings

A. Set up phone line 1

B. Set up phone line 2

C. VoIP advanced settings

D. Port advanced settings

E. Dial plans

F. Quick Dial plans

G. Call history

H. DECT settings

I. Phone Mapping

J. Answering machine

This function allows you to configure up to 20 quick dialling plans. This is done by assigning a quick dial code for a specified phone number. You can enter both phone numbers for calls via the fixed network and also SIP user names for calls via VoIP.

Vanity keypad style

You can choose the vanity keypad style among these options

1. Australian Classic ▾

Dialling plans

You can add a phone number here and decide if this particular number is called over VoIP or PSTN.

Quick dial code	Vanity	Number / user name	Configure
*7 ___ #	*8 ___ #	___	Add

In this section, set up quick dial codes for Budii's handset.

To set up quick dial plans:
1. Click the 3. Set up my VoIP tab.
2. From the navigation bar on the side, click F. Quick dial plans.
3. Make your selections and click Save Settings.

> **To make a quick dial call from your Budii™ handset, press *7xx#, where "xx" stands for the quick dial code you assigned to the number.**

At Number/User Name, you can enter either a phone number to make calls via the standard phone network, or a SIP username to call someone on VoIP.

Call History

To see Budii's call history:

1. Click the 3. Set up my VoIP tab.
2. From the navigation bar on the left, click G. Call history.

You'll see:

- Calls you missed
- Calls you made
- Calls you answered

You'll also see the status of your VoIP line and some statistics about calls to and from it.

DECT Settings

DECT (Digital Enhanced Cordless Telecommunications) is the standard we use for cordless phone systems. In this section you'll set up Budii's handset, and tablet if you have one. You'll then be able to carry your phone and tablet around with you, unrestrained by cords and cables. It also means you can have several phone handsets in different locations around your home, all operating from a single telephone wall socket.

DECT systems have a base and a handset - in your case, the base is Budii™. One handset is included with Budii™, and you can purchase other handsets, which rest in their chargers.

ABOUT THE DECT SETTINGS

On the DECT page you'll see three sections:

- **DECT Handset** - lets you register, unregister and page your handsets.
- **DECT PIN Code** - lets you change your DECT PIN.
- **Handset registration state** - tells you the status of up to five DECT handsets.
- **DECT Handset Name** - tells you the names you've defined for your handsets.
- **DECT Phone Book** - links you to your DECT phone contact list, where you can also add new entries.

REGISTERING A BUDII™ TABLET OR HANDSET

When you purchase Budii™, you'll have a handset included. You may have a tablet as well, depending on the package you purchased.

You'll only need to register a tablet or handset if:
- You buy a new one that wasn't included in your initial Budii™ purchase
- You reset your tablet or handset to factory settings
- You reset Budii™ to factory settings.

To register a tablet or handset:

1. Turn on the Budii™ tablet or handset and press the applications icon.
2. Press the settings icon
3. Press DECT Settings in the list
4. Press Handset Settings
5. Press Registration - Register to DECT base.
6. Select Base 1 and click Next
7. Do one of the following:
   - On Budii's rear panel, press the DECT Pair button. See the Budii™ Overview for help finding this button.
   - From Budii's admin interface at 3. Set up my VoIP > H. DECT settings, click Register DECT Handset.
8. On the tablet or handset, press Register.
9. On the tablet or handset, press OK.
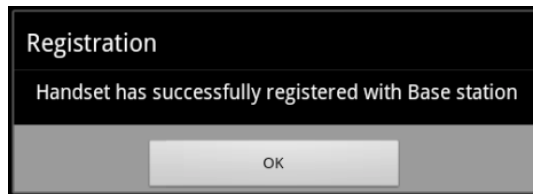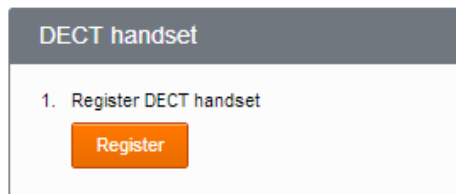
The tablet or handset is now registered with Budii™ and if you have Netphone your calls will be routed over the Netphone service by default.
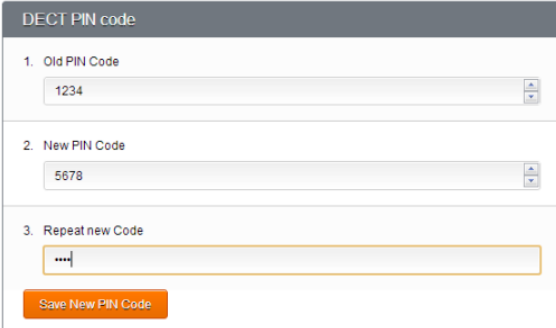
If you wish to make calls over your standard PSTN telephone network (does not apply to Naked DSL customers), and bypass the Netphone service, you can follow the steps below. Depending on your standard telephony service call charges will vary, please check carrier charges applicable.

1. Enter the phone mode on your handset
2. Dial ** on the keypad and press the green dialler phone symbol
3. You will hear a message informing you that the call will be routed through standard PSTN service and then you will hear a dial tone
4. Dial the number you want to reach and press the green dialler to initiate the phone call

DECT PIN CODE
To change your DECT PIN code
1. Click the 3. Set up my VoIP tab.
2. From the navigation bar on the left, click A. DECT settings.
3. In the DECT PIN Code section, at Old PIN code, enter your existing DECT PIN code.
4. Enter your new PIN at New PIN Code, and confirm it in the box below.
5. Click Apply.
6. Click Save Settings.

DECT PIN code

1. Old PIN Code

1234

2. New PIN Code

5678

3. Repeat new Code

••••

Save New PIN Code

HANDSET REGISTRATION STATE

To view the status of your DECT handsets:

1. Click the 3. Set up my VoIP tab.
2. From the navigation bar on the left, click A. DECT settings.
3. Scroll down to the Handset Registration State section.

Handset registration state

Handset 1:registered
Handset 2:not registered
Handset 3:not registered
Handset 4:not registered
Handset 5:not registered

DECT HANDSET NAME

To rename your DECT handsets:

1. Click the 3. Set up my VoIP tab.
2. From the navigation bar on the left, click A. DECT settings.
3. At DECT Handset Name, choose a handset and type a new name for it.
4. Click Apply.
5. Click Save Settings.

DECT HANDSET NAME

1. HANDSET 1

   DectPhone 1

   Apply

2. HANDSET 2

   DectPhone 2

   Apply

DECT PHONE BOOK

To access your DECT Phone Book:

1. Click the 3. Set up my VoIP tab.
2. From the navigation bar on the left, click A. DECT settings.
3. At DECT Phone Book, click View.

Phone Mapping

ABOUT THE SETTINGS ON THIS PAGE
This page lets you choose which phone lines are assigned to which handsets.

Phone lines
There are three phone lines listed in the tables on this setup page:

- PSTN - your standard telephone service land line.
- VoIP 1 - your VoIP line.
- (VoIP 2 is not used).

These phone lines are listed across the top of the table.

Handsets

There are two groups of handsets:

- FXS Phone - A fixed land line, connected to the telephone service through a wall socket.
- DECT Phone - Your cordless handsets.

What you'll do in this setup page is assign phone lines to handsets. For example, you could set up your PSTN (land line) to make your FXS phone ring, and your VoIP lines to make the DECT (cordless) handsets ring, by configuring the options in the Incoming Call Mapping section.

CONFIGURING PHONE MAPPING

To configure phone mapping:

1. Click the 3. Set up my VoIP tab.
2. From the navigation bar on the left, click I. Phone Mapping.
3. Decide on a phone mapping scheme for Outgoing call mapping, and make your selections in the table.

   - In this example, we'll set things up so that whether you make calls with your cordless handsets or your fixed phone, all your calls will use VoIP Line 1.

Endpoint/VOIP Account	PSTN	VOIP 1	VOIP 2	Reset
FXS Phone	●	●	○	Reset
DECT Phone	●	●	○	Reset

Outgoing Call Mapping

4. Decide on a phone mapping scheme for Incoming call mapping, and make your selections in the table.
   • In this example, we'll set up all calls to your VoIP lines and your land line telephone service to make all handsets ring - cordless and fixed.

Incoming Call Mapping

Endpoint/VOIP Account	PSTN	VOIP 1	VOIP 2	Reset
FXS Phone	●	●	●	Reset
DECT Phone	●	●	●	Reset

5. Click Save Settings.

To reset a phone mapping:
1. Click the 3. Set up my VoIP tab.
2. From the navigation bar on the left, click I. Phone Mapping.
3. Clear any mapping you've created on this page by clicking Reset next to a mapped phone line.
4. Click Save Settings.

Answering Machine

iinet budii
connect better

| 1. Wizard | 2. Set up my wireless | 3. Set up my VOIP | 4. Configure my USB Port | 5. Advanced Settings | 6. Handy Tools | 7. Status / Diagnostics |

Set up my VOIP

Answering machine

Refresh   Save Settings

A. Set up phone line 1

B. Set up phone line 2

C. VoIP advanced settings

D. Port advanced settings

E. Dial plans

F. Quick Dial plans

G. Call history

H. DECT settings

I. Phone Mapping

J. Answering machine

Settings

1. ☑ Answer machine enabled

2. Ringing timer setting

   25

3. Recording timer setting

   120

4. Max messages count setting

   30

5. To set up email alerts click here:

   Configue

ABOUT THE SETTINGS ON THIS PAGE

- Answering machine enabled - To use Budii's answering machine, tick this box. To disable the answering machine, un-tick it.
- Ringing timer setting - Allow the phone to ring for this many seconds before Budii's answering service takes the call for you.
- Recording timer setting - This controls the length of the message a caller can leave for you.
- Max messages count setting - Budii™ will accept up to this many messages. Once the message bank is full, no new messages will be recorded.
- Email alerts - Budii™can be configured to send an e-maill to you when you a caller leaves a message.

On this page you'll also see a summary of your new and old messages. New messages are those you haven't listened to yet. Old messages are those you've already listened to.

ANSWERING MACHINE SETUP

To set up Budii's answering machine:

1. Click the 3. Set up my VoIP tab.
2. From the navigation bar on the left, click C. Answering machine.
3. Change Budii's answering machine settings.
4. Click Save Settings.

Configuring email alerts

To configure email alerts for Budii's answering machine:

1. From the Answering Machine screen, at Set up email alerts, click Configure.
2. Enter the details of your
   - From email address - the email address to send alerts from.
   - To email address - the email address to send alerts to.
   - SMTP server address - the name of the mail server that will send the emails, for example: mail.iinet. com.au.
   - Email account username.
   - Email account password.
3. Click Save Settings.

Configure USB Port

Budii™ has a slot on the back where you can plug in USB devices. Using this USB port you can set up a backup mobile Internet service or configure a USB hard drive as a file server or a web server.

Set up a Mobile Broadband USB modem

If you set up mobile broadband, remember to check with your provider about their data charges. Also, when you're using mobile broadband, you won't be able to take advantage of iiNet's Freezone - the content in Freezone will be charged at your mobile provider's standard data rates.

As well as being an ADSL modem, Budii™ has a USB slot that supports mobile broadband Internet. To use mobile Internet, insert a USB modem (not included with Budii™) from your mobile service provider into the slot on the back of Budii™.

You can set up Budii™ to switch to the mobile network if your ADSL connection drops out. If you use mobile Internet, make sure you check with your mobile service provider to find out about their data fees.

To set up a Mobile Broadband USB modem:

1. Insert a mobile broadband adaptor in Budii's USB modem port on the rear panel.
2. Click the 4. Configure my USB port tab.
3. Click A. Set up my 3G USB modem.
4. At the Choose your 3G service provider dropdown, select a mobile provider.
5. Choose a Connection option:
    - To bypass ADSL and use only your mobile broadband USB modem, choose Connect all the time.
    - To connect to mobile broadband when your ADSL connection is down, choose Connect on Internet connection down.

> If you choose this option, Budii™ will seamlessly activate mobile broadband when your ADSL connection is unavailable - so remember to check with your mobile provider to find out what data charges will apply.

    - Choose Turn 3G adapter off to never use USB mobile broadband.
6. If you're with iiNet or Westnet, skip straight to Step 6. If you chose Other 3G, there are a few more settings to fill out:
    - Service Number - this is not the phone number for your SIM card. It's a number your mobile broadband provider gives you to establish a connection.
    - Network APN - (Access Point Name) is an authentication setting attached to your SIM that allows you to connect to your operator's mobile broadband network.
    - 3G Username and 3G Password are also authentication settings for the mobile network.
    - Pin Code is the PIN on your SIM. If you're not sure what to put here, your mobile broadband service provider will be able to help you with the details.
7. Click Save Settings.

Set up a USB hard drive as an FTP (File Transfer Protocol) server

A FTP (File Transfer Protocol) server hosts files and allows people to download and/or upload them over the Internet. You'd use this feature if you were running a file hosting service and had lots of files that you need to make available for others to download.

To set up a USB hard drive as an FTP server, you'll need to choose some settings for your FTP server and save them. Then, you'll create an account that people can use to log in to your FTP server.

To set up a USB hard drive as an FTP server:
1. Plug a USB hard drive into the USB port in Budii's back panel.
2. Click the 4. Configure my USB port tab.
3. From the navigation bar on the left, click B. Set up my FTP server.
4. Click Toggle FTP server function, setting it to On.
5. Choose a Port[19] number to use. 21 is the default - you might not need to change it.
6. Enter the maximum number of computers that can use your FTP server at the same time. This setting can help you to control the bandwidth your FTP server uses.
7. Enter the time limit a user can be inactive before they'll need to log back in.
8. If you want people to be able to use your FTP server from the Internet, not just your home network, tick Remote Access.

[19]A port sorts traffic coming to and from a computer's IP address by the type of traffic being sent. For example, when one computer contacts another to retrieve a web page, this type of traffic uses port 80 - the standard port for web pages. FTP requests, on the other hand, use port 21. Using ports to separate the traffic means that many applications and services can run over the same IP address.

9. Click Save Settings. Your setup page should now look something like this:

ON   Toggle FTP server function

Add FTP user

1. Port number to use

    21

2. Maximum amount of computers that can connect to my hard drive at the same time

    10

3. If no users have accessed file after this period of time they will need to log back in after (minutes)

    10

Add User

10. Click Add User and follow the below steps.
11. Now you're all set up - you can log in to your FTP server.

To add an FTP user:

1. In the first box, type a username.
2. In the second box, type a password. See About Passwords for help in choosing a secure password.
3. In the third box, re-type the same password.
4. From the dropdown box, choose whether this FTP account will have full access or read-only access.

> **Full access means anyone using this account to connect to your FTP server can modify, add and delete files as well as download them.**

5. At Select Volume, choose a file system to use as the FTP server.
6. At Path, click Browse and choose a folder.
7. Click Save Settings. You'll be returned to the main FTP server setup page, and the account you set up will be listed at the bottom of the screen like this:

User name	Device	Folder available to access	Edit details	Delete
☑ user1	Device: hp (v250w) Volume: NTFS	Path: /	Edit	Delete

General settings

1. Create a name that a user will need to enter to access the hard drive, for example you could enter a persons name if it will be a unique user accessing your hard drive (Joe Smith), or if you want to keep it generic enter something like user1

   user1

2. Enter a secure password that the user above will need to enter to access your files. To make it as secure as possible we suggest using a combination of upper and lower case letters, and maybe add a numeral too. For example tHfdre29 (don't use this one but make up your own!)

   •••••••••

3. Please re enter the password to confirm

   •••••••••

4. Please select the access you want to give this user. Full access means they can move/copy/delete files and read only access means they can only open the file, they will not be able to delete/copy/alter the files.

   Read-only ▾

5. Volume

   hp (v250w),   1.NTFS ▾

6. Path

   /

   Browse

LOG IN TO YOUR FTP SERVER

Once it's all set up, you can log in to the USB hard drive connected to Budii™ just like you would to any FTP server.

Log in with an FTP client

Here's how it might look from a user's point of view with the FTP client FileZilla. For this example, we're using these details:

- Host (your external IP address): 123.123.123.4.
- Username: user1, just like the account we set up earlier.
- Password: The password we chose for user1.
- We've left Port blank, since we've used default FTP port 21. If you changed this setting, you'd need to enter the port number in your FTP client.

After entering those details, we connect, and can now transfer files to and from the USB FTP server.
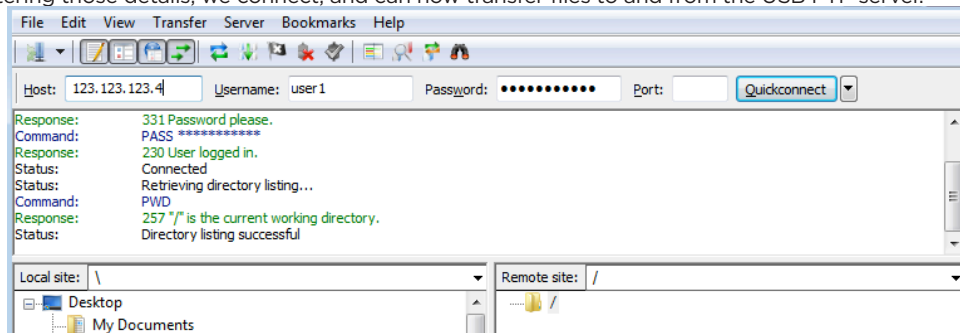
Log in with a web browser

If all you need to do is download files, you can connect from your web browser by typing something like this into the address bar: ftp://123.123.123.4. If you changed the port setting from its default, you'd enter ftp://123.123.123.4:xx , where xx is the port number you chose.

Your browser will bring up an authentication window. Enter the username and password of the account you set up before, and press Log in.
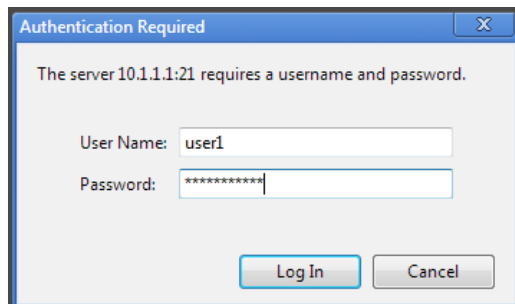
Once you're logged in, you'll be able to download any available files.

USB Web Server

Budii™ can set up an external USB hard drive as a web server - so you'll be able to run a website from it.

To set up a web server:

1. Click 4. Configure my USB port.
2. From the navigation bar on the left, click C. Set up my web server.
3. Follow the prompts to configure your web server. You'll need to:
   - Toggle the web server feature internally to On
   - Plug a USB hard disk drive into Budii's USB port
   - Browse to your website on the USB hard disk
   - Choose a Port[20]
   - Select whether to make the site accessible externally. If you do this, users can get to your website by typing in your WAN IP address and the port you selected in their browser. For example: http://123.123.123.4:8000
4. Click Save Settings.

[20]A port sorts traffic coming to and from a computer's IP address by the type of traffic being sent. For example, when one computer contacts another to retrieve a web page, this type of traffic uses port 80 - the standard port for web pages. FTP requests, on the other hand, use port 21. Using ports to separate the traffic means that many applications and services can run over the same IP address.

Set up a USB hard drive as a file server

Budii's file server feature lets you set up a USB hard drive to be accessible by the computers on your local network (see Set up a USB hard drive as an FTP server if you need the files to be accessible from outside your home network).

When you enable Budii's file server function, it's automatically configured to let people on your home network use it without a password, but they'll only be able to read files, not modify, add or delete them.

This guide will step you through enabling and setting up the file server, and will also tell you how to set up a password-protected account with full access to read, modify, add and delete files. We'll also show you how to get to the file server from a Windows computer once it's set up.

To set up a USB hard drive as a file server:
1. Click 4. Configure my USB port.
2. From the navigation bar on the left, click D. Set up my file server.
3. Click Toggle file server function to On.
4. If you need to, change these settings:
    - Server Name: This is how the USB file server will appear in your file system.
    - Server Description: A text description of the USB file server.
    - Group Name: In Windows, this is also called the domain. Usually this can be left as WORKGROUP, but it depends how you've set up your home network.

5. Click Save Settings. Your setup page should now look something like this:
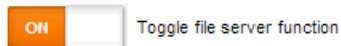
6. If you need to set up another account (for example, a password-protected, read-write account) for Budii's USB file server, follow these steps.

To set up a password-protected file server account:

1. From the USB file server setup page, click Add User.
2. Enter a share folder name (this is also the username you'll need to connect).
3. Select an access mode.
4. Type a password, and confirm it in the box below.
5. Click Save Settings.

User Profile

1. The sharing folder name doubles as the username, when you access the folder share you will be prompted to enter a username and password, the username is the sharing folder name and the password specified below.
The sharing folder name cannot include any special characters: spaces, /, \, ", <, >, %, ^, [,], `, +, $, ,, =, #, &, :, ;, *, ?, | or '

2. Sharing Folder Name

    finn_photos

3. Volume

    hp (v250w),   1.NTFS

4. Path

    /

    Browse

5. Access Mode

    ○ Read-only
    ● Full-access

6. Read-only Password

7. Password Confirm

8. Full-access Password

9. Password Confirm

6. You'll be taken back to the main USB file server setup page. The account you've set up appears like so:

Existing users

You currently have the following users configured to use your home file server

User name	Device	Folder available to access	Edit details	Delete
☑ anonymous	Device: Volume:	Path: /	Edit	Delete
☑ finn_photos	Device: hp (v250w) Volume: NTFS	Path: /	Edit	Delete

VIEW THE FILES ON YOUR USB FILE SERVER
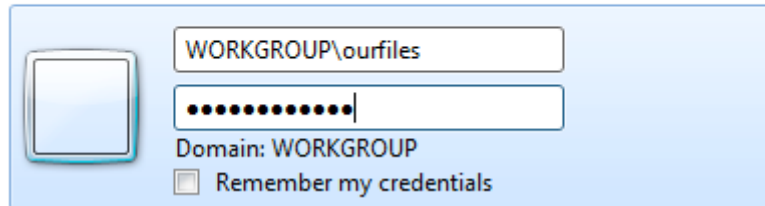
You'll now be able to see Budii's USB file server in your local network. On a Windows 7 computer, here's how it might look in Windows Explorer:
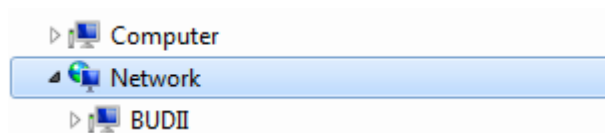
To access the files on Budii's USB file server, expand Budii™. You might be prompted to enter a password:

In this case, just enter the credentials you set up when you created an account.

Web DAV

Web DAV stands for Web-based Distributed Authoring and Versioning. It's a technology based on HTTP that lets you collaborate online to create and edit Web content that's stored on a WebDAV server - Budii™ has one of these built in.

To enable the Web DAV server:

1. Click 4. Configure my USB port.
2. From the navigation menu on the left, click E. Web DAV server.
3. Click Toggle Web DAV feature.
4. Browse to the Web DAV folder on your USB hard drive.
5. Change the Port[21] for Web DAV if you need to.
6. Click Save Settings.
7. Click Add User to create user profiles. Budii™ can have up to five profiles.

Set up my Web DAV server

Refresh   Save Settings

Web-based Distributed Authoring and Versioning (WebDAV) is a set of methods based on the hypertext protocol that facilitates collaboration between users in editing and managing documents and files stored on the world wide web.

ON   Toggle Web DAV feature

Volume

1. hp (v250w),   1.NTFS

2. Use the **choose file** button to view the folders on your connected hard drive, then select a folder to share with other computers on the internet

   /

   Browse

3. Default port for Web DAV

   8081

Login user profile (up to 5 profiles)

User ID	Path	Configure
	Add User	

[21]A port sorts traffic coming to and from a computer's IP address by the type of traffic being sent. For example, when one computer contacts another to retrieve a web page, this type of traffic uses port 80 - the standard port for web pages. FTP requests, on the other hand, use port 21. Using ports to separate the traffic means that many applications and services can run over the same IP address.

UPnP Share (DLNA)

iinet budii	1. Wizard	2. Set up my wireless	3. Set up my VOIP	4. Configure my USB Port	5. Advanced Settings	6. Handy Tools	7. Status / Diagnostics

Configure my USB port

UPnP share   Refresh | Save Settings

A. Set up my 3G USB modem

B. Set up my FTP server

C. Set up my web server

D. Set up my file server

E. Web DAV server

F. UPnP Share

Minidina is a UPnP (TM) A/V Media Server. It implements the server component that provides UPnP media devices with information on available multimedia files. uShare uses the built-in http server of libupnp to stream the files to clients

OFF   Toggle web server feature internally

Volume

1. Lexar (Echo)   1.FAT32   ▼

2. Use the **choose file** button to view the folders on your connected hard drive, then select a folder to share with other computers on the internet

   /

   Browse

3. Port Number

   8200

DLNA (Digital Living Network Alliance) Certified devices automatically see each other on Budii's home network. For example, your DLNA Certified TV could access content from a Budii™ USB file server. With DLNA technology you can easily watch movies and video, look at photos, and listen to music over your home network.

To enable Budii's support for DLNA:

1. Click the 4. Configure my USB port tab.
2. From the navigation menu on the left, click F. UPnP Share.
3. Click Toggle UPnP Share, setting it to On.
4. Select the memory card, and click the dropdown box to select FAT32.
5. Click the Browse button and select the folder on your USB hard drive that holds your content.
6. Click Save Settings.

That's it - you will now be able to access your DLNA Certified devices from any compatible device on your home network.

Remote Management

This is where you can change Budii's password and enable remote management.

> **⚠ Budii's default password is "admin" – not hard to guess, so we recommend you change it, especially if you're going to enable remote management. See Changing Budii's Admin Password for instructions.**

ABOUT REMOTE MANAGEMENT

Budii™ remote management gives you access to your settings from any computer connected to the Internet - handy if you need to reconfigure while you're out and about. This setting is disabled by default.

To keep your settings secure, we strongly recommend you change your modem password before enabling remote management.

Remote management settings

Port
Incoming requests to access Budii's admin site will only be permitted through the port you specify. The default is 2420. See the Glossary for more information on ports.

Selected computers
By default, enabling remote management lets you access Budii's settings from any computer on the Internet. However, you might want to restrict access and only permit remote management from specific computers. Budii™ lets you specify up to three. If you fill out this section, only computers with IP addresses matching your selections will be permitted to log in to Budii's admin site.

IP Address
Once you've enabled Remote Management, you'll be able to access Budii's admin pages by entering your unique IP address, along with the port you specify, into a browser. Your current unique IP address is shown on the setup page in the modem web interface.

To access Budii™ remotely, you'd type in a URL. For example:

ENABLING REMOTE MANAGEMENT

To enable remote management:

> **Important: Change your modem password from the default before doing this.**

1. Click the 5. Advanced Settings tab.
2. From the navigation bar on the left, click A. Modem Password & Remote Management.
3. Click Toggle Remote Management, setting it to On.
4. Optionally, change the default remote management Port[22] to one of your choice.
5. Select up to three computer IP address[23] to allow access, or leave this blank to permit access from any computer.
6. Click Save Settings.

[22]A port sorts traffic coming to and from a computer's IP address by the type of traffic being sent. For example, when one computer contacts another to retrieve a web page, this type of traffic uses port 80 - the standard port for web pages. FTP requests, on the other hand, use port 21. Using ports to separate the traffic means that many applications and services can run over the same IP address.

[23]Each computer on a network has a set of numbers that tells other computers where to find it so they can communicate. This is called an IP address. An IP address has four groups of up to three digits, separated by dots, like this: 123.45.67.012

Remote management

ON | Toggle remote management

Set this to **ON** to ensure settings made within the *Remote management* section are saved

Your current IP address to access this modem remotely over the internet is 0.0.0.0

1. Select the port number to remotely access your modem

2420

port 2420 is selected by default

2. To Allow only selected computers to access your modem, add up to three computers to the list provided.

If you leave these as 0.0.0.0 then any computer can access your modem remotely

Computer 1

0 : 0 : 0 : 0

Computer 2

0 : 0 : 0 : 0

Your remote management settings have been saved.

DNS (Domain Name Server), UPnP (Universal Plug and Play) and DDNS (Dynamic Domain Name Server)

Normally, iiNet manages the way your computer looks up IP addresses and domain names. If you need to change these settings, you'll find them under Advanced Settings -> DNS, UPnP and DDNS. You can also enable and disable UPnP (Universal Plug and Play).

ABOUT DNS (DOMAIN NAME SERVER) LOOKUP

A DNS (Domain Name Server) translates website names into IP addresses - numbers that your computer can understand. For example, when you enter "www.iinet.net.au" into a browser, your domain name server translates it to something like "203.173.50.151". Your computer then shows you the content located at that address.

iiNet chooses a domain name server for you, but you can change this setting by entering the IP address of a different DNS.

DNS settings

Let my ISP manage the DNS server
Un-tick this box if you need to enter the primary and secondary DNS addresses yourself.

Primary DNS Address
The IP address of the domain name server your computer will use.

Secondary DNS Address
The IP address of a backup domain name server. Your computer will use this if there's a problem with the primary DNS.

CHANGING YOUR DNS ADDRESSES

See About DNS for help with these settings.

To change your DNS addresses:
1. Click the 5. Advanced Settings tab.
2. From the navigation bar on the left, click D. DNS, UPnP and DDNS.
3. Click Let my ISP manage the DNS server, setting it to No.
4. At Primary DNS Address, enter the IP address of a primary DNS.
5. At Secondary DNS Address, enter the IP address of a secondary DNS.
6. Click Save Settings.

1. DNS

A DNS (domain name system) translates regular, human–readable web addresses (eg: www.iinet.net.au) into numerical identifiers that computers understand. These allow computers to retrieve URLs that are typed into a web–browser. By default, your ISP ❓ takes care of this.

To use an alternate DNS server, set the **Let my ISP manage the DNS server** switch to "NO" and enter your preferred DNS addresses into the two *DNS address* fields.

| NO | Let my ISP manage the DNS server

1. Primary DNS address

   123.45.67.89

2. Secondary DNS address

   123.34.56.78

Your DNS settings have been updated.

ABOUT UPNP (UNIVERSAL PLUG AND PLAY)

Universal Plug and Play allows your computers, printers and other devices to find each other on your home network.

ENABLING UPNP

To enable UPnP:

1. Click the 5. Advanced Settings tab.
2. From the navigation bar on the left, click D. DNS, UPnP and DDNS.
3. Click DNS, UPnP and DDNS.
4. Click Toggle UPnP, setting it to Yes.
5. Click Save Settings.
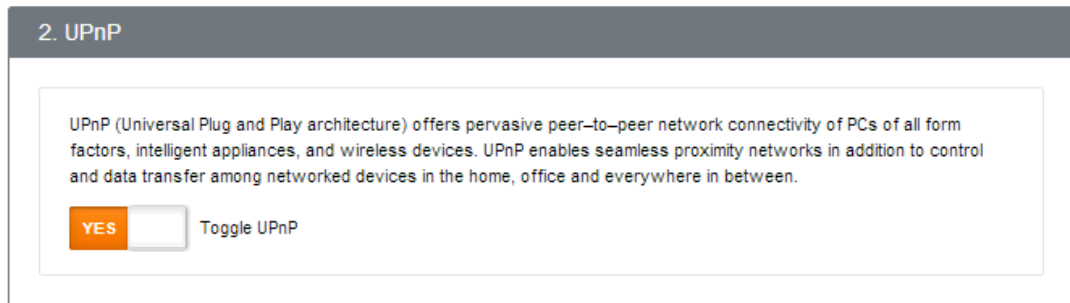
UPnP has been enabled.

ABOUT DDNS

In some cases, the IP address allocated to Budii™ by iiNet can change. Signing up for a DDNS (Dynamic DNS) service lets you use a domain name instead of an IP address - so if you've enabled Remote Management, you'll always be able to access your modem, even if your IP address changes.

You may want to set up a DDNS service if you have a dynamic IP address and want to use Budii's Remote Management features.

DDNS Settings

Enable or disable Dynamic DNS
Turns DDNS on or off for Budii™.

Status
The status of your DDNS service. Information will be shown here when DDNS has been set up.

Provider
The organisation hosting your DDNS service - for example, DynDNS or No-IP.

Domain Name
A domain name allocated to your modem, supplied by your DDNS provider -
for example, "yourname.dyndns.org".

Account or email
The account name or email address you used to sign up for DDNS with your DDNS provider.

Password
The password for your DDNS account.

CONFIGURING DDNS

Sign up for a DDNS service before following these steps.

To configure DDNS:

1. Click the 5. Advanced Settings tab.
2. From the navigation bar on the left, click D. DNS, UPnP and DDNS.
3. Set Toggle DDNS to Yes.
4. At Provider, select the organisation hosting your DDNS service.
5. At Domain Name, enter the domain name supplied by your DDNS provider.
6. At Account or email, enter your DDNS account name.
7. At Password, enter your DDNS password.
8. Click Save Settings.

Budii™ time settings

This section lets you set up Budii™ so it can get the correct time from iiNet or another online time service. You can also change your time zone and set Budii™ up for daylight savings.

	1. Wizard	2. Set up my wireless	3. Set up my VOIP	4. Configure my USB Port	5. Advanced Settings	6. Handy Tools	7. Status / Diagnostics

Modem time settings

Refresh | Save Settings

Advanced settings

A. Modem password & remote management

B. DNS/UPnP/DDNS

C. Modem time settings

Why does my modem need to have accurate time?

Your modem synchronises with a time server on the internet to provide a common reference for accuracy of network logs to help in trouble shooting of modem outages. There are many sources for time servers, for example the National Institute of Standards and Technology (NIST) automated computer time service (ACTS) is designed for modems that regularly connect to the internet.

ABOUT BUDII'S TIME SERVER SETTINGS

Budii™ needs a way to get the time accurately - this helps us to troubleshoot any problems for you.

To get the time, Budii™ contacts another computer on the Internet called a time server. Budii™ is set up to get the time from our time server - time.iinet.net.au - but you can change that if you want.

Let me manage the time server

When toggled to Yes, this tells Budii™ to ignore anything in the Primary time server and Secondary time server dropdown boxes, and to refer to what you've entered at Custom Time server IP address.

Primary Server
The main time server your modem will use.

Secondary Server
A backup time server your modem will use if there's an issue with the Primary Server.

Custom time server IP address
This is where you'd enter an IP address of an alternate time server.

CHANGING YOUR MODEM'S TIME SERVER SETTINGS
You can either select a time server from our list, or enter the IP address of a different one.

To select a time server from the list:
1. Click the 5. Advanced Settings tab.
2. From the navigation bar on the left, click C. Modem time settings.
3. Toggle Let me manage the time server to No.
4. At Primary Server, choose a time server from the list.
5. At Secondary Server, choose a backup time server.
6. Click Save Settings.

Your modem time server has been changed.

Time server

| NO | Let me manage my time server? |

1. Primary time server

   time.iinet.net.au ▼

2. Secondary time server

   time.nist.gov ▼

3. Custom time server IP address

   Use this option if you have set **Let me manage my time server?** to **"YES"**. This will override the primary and secondary time server settings.

To select a time server by IP address:

1. Click the 5. Advanced Settings tab.
2. From the navigation bar on the left, click C. Modem time settings.
3. Toggle Let me manage the time server to Yes.
4. At Custom time server IP address, enter an IP address of an alternative time server.
5. Click Save Settings.

Your modem time server has been changed.

Time server

YES Let me manage my time server?

1. Primary time server

   time.iinet.net.au

2. Secondary time server

   time.nist.gov

3. Custom time server IP address

   123.45.67.89

   Use this option if you have set **Let me manage my time server?** to "YES". This will override the primary and secondary time server settings.

DAYLIGHT SAVINGS AND LOCAL TIME

This is where you can change your time zone and make sure your modem's time settings account for daylight savings.

Changing your daylight savings and time settings

To change your time zone:

1. Click the 5. Advanced Settings tab.
2. From the navigation bar on the left, click C. Modem time settings.
3. From the Time zone dropdown box, select your time zone.
4. Click Save Settings.

Your time zone has been changed.

Daylight saving and my local time

Current time: 2010/1/1 - 2:31:10

1. Time zone

(GMT+10:00) Canberra, Melbourne, Sydney ▾

2. ☑ Automatically adjust clock for Daylight Saving Time?

If you region is experiencing daylight saving, select this option to ensure that your modem recognises the local time. This will ensure your client based filtering is in sync with the correct time during periods where daylight saving is recognised.

To set up your modem for daylight savings:
1. Click the 5. Advanced Settings tab.
2. From the navigation bar on the left, click C. Modem time settings.
3. Tick Automatically adjust clock for Daylight Saving Time.

Budii™ will now adjust itself for daylight savings.

To check your modem's current time:
1. Click the 5. Advanced Settings tab.
2. From the navigation bar on the left, click C. Modem time settings.

Budii's current time is displayed under Daylight saving and my local time.

Access Control and Parental Control tools

In this section you can:

- Set up restrictions to prevent Internet access at certain times of day.
- Restrict people from accessing particular websites.
- Screen websites by keyword.

INTERNET SCHEDULE RULE

This lets you block particular computers from the Internet at the times you list. To use this feature you'll need to

know the IP addresses of the computers you're blocking.

To block Internet access to a specific computer:

1. Click the 5. Advanced Settings tab.
2. From the navigation bar on the left, click D. Access Control and Parental Control Tools.
3. At Internet schedule rule, click Configure.
4. From the Week Day column, locate the day of the week on which you want to restrict access.
5. At Start Time, for the week day you chose, enter the time to start blocking the Internet for that computer. Use 24-hour time.
6. At End Time, for the week day you chose, enter the time to restore Internet access to the blocked computer. Use 24-hour time.
7. At IP address of computer, enter the last digits of the computer's IP address in both boxes. A range of addresses is fine.
8. Click Save Settings.

In the screenshot below, the computer at 10.1.1.4 is blocked from the Internet between 10pm on Sunday nights and 6am on Monday mornings. It can access the Internet at all other times.

COMPUTER FILTER RULE

This section lets you filter the computers that can access Budii's home network. Only the computers and devices you list by MAC address will have access to your network - all others will be blocked.

This section helps provide MAC Filter configuration. When enabled, only MAC addresses configured will have access to your network. All other client devices will get denied access. This security feature can support up to 32 devices and applies to clients.

ON Toggle MAC address control

MAC Filtering Table

Add up to 32 computers

1. Device 1

| e5 | : | eb | : | af | : | f4 | : | ad | : | 12 |

2. Device 2

| 3g | : | 23 | : | de | : | 12 | : | ae | : | de |

To set up a computer filter rule:

1. Click the 5. Advanced Settings tab.
2. From the navigation bar on the left, click B. Access Control and Parental Control Tools.
3. At Computer filter rule, click Configure.
4. Click Toggle MAC address control, setting it to On.
5. Scroll down the page to DHCP client list, and select a computer to give access to.

> The DHCP client list will tell you all the computers on your home network by IP address and hostname. You can use this information to identify the computers you're filtering.

6. From the Copy To dropdown, select a row in the table. Make sure you don't overwrite the ones you've already entered.
7. Click Copy.
8. Repeat steps 3 - 5 for all the computers you want to give access to.
9. Click Save Settings.

URL WEBSITE FILTERING RULE

In this section, you can set up a rule to block people from accessing websites with URLs or keywords you specify. You can set it up so that everyone is blocked from these sites, or just the computers you list.

Rules			
Rule number	**URL/keyword**	**Client PC ***	**Apply for all PCs?**
1	www.blockedsite.com	10.1.1. 4 ~ 4	☐
2	blocked words here	10.1.1. 4 ~ 4	☐

> ⊘ **To use this tool to block a particular computer, you'll need to know its IP address on your home network. See How to find a computer's IP address for more information.**

To set up a website or keyword filtering rule:

1. Click the 5. Advanced Settings tab.
2. From the navigation bar on the left, click D. Access Control and Parental Control Tools.
3. At URL Website filtering rule, click Configure.
4. At URL or keyword, enter one of the following:

- A website address to block - for example, www.blockedsite.com
- A keyword to block. Any website containing this word will be blocked.

5. At ClientPC and Apply for all PCs, do one of the following:

    - To restrict a particular computer, enter the last digits of its IP address in both boxes. It should look something like this:

    10.1.1. [14] ~ [14]

    - You can enter a range of IP addresses if you want. Supposing all your kids' computers have IP addresses between 10.1.1.3 and 10.1.1.6 (inclusive), here's what you'd enter:

    10.1.1. [3] ~ [6]

    - If you want to block all computers on your network from viewing this site, leave both boxes blank and tick All PCs, like this:

Client PC *			Apply for all PCs?
10.1.1.	[ ]	~ [ ]	☑

6. Click Save Settings.

Test the filter by trying to get to a blocked site on one of the computers you restricted. If the filter is set up correctly, you should see something like this, depending on which browser you're using:

This webpage is not available

chrome

Google Chrome could not load the webpage because **www.adirtysite.com** took too long to respond. The website may be down, or you may be experiencing issues with your Internet connection.

Here are some suggestions:

- Reload this webpage later.
- Check your Internet connection. Restart any router, modem, or other network devices you may be using.
- Add Google Chrome as a permitted program in your firewall's or antivirus software's settings. If it is already a permitted program, try deleting it from the list of permitted programs and adding it again.
- If you use a proxy server, check your proxy settings or contact your network administrator to make sure the proxy server is working. If you don't believe you should be using a proxy server, adjust your proxy settings: Go to **the wrench menu > Settings > Show advanced settings... > Change proxy settings... > LAN Settings** and deselect the "Use a proxy server for your LAN" checkbox.

Error 7 (net::ERR_TIMED_OUT): The operation timed out.

INTERNET ACCESS SCHEDULE

This section lets you set up a schedule to restrict Internet access from all the computers on your network at certain times of day.

Rules

Week day	Start time (hh:mm)		End time (hh:mm)	
Sunday	00	00	00	00
Monday	15	30	22	00
Tuesday	00	00	00	00
Wednesday	00	00	00	00
Thursday	00	00	00	00
Friday	00	00	00	00
Saturday	00	00	00	00

To set up an Internet access schedule:

1. Click the 5. Advanced Settings tab.
2. From the navigation bar on the left, click D. Access Control and Parental Control Tools.
3. At Internet access schedule, click Configure.
4. From the Week day column, find the day of the week you'd like to restrict all Internet access.
5. At Start time, for the week day you chose, enter the time to start blocking Internet access for your whole network. Use 24-hour time.
6. At End time, for the week day you chose, enter the time to restore Internet access to your network. Use 24-hour time.
7. Click Save Settings.

Internet setup and ADSL standard

These advanced settings are already configured for iiNet users.

For troubleshooting purposes, here's where you can:

- Change the way your ADSL[24] Internet connection is configured - authentication, encapsulation, Quality of Service class, etc
- Change the ADSL protocol
- Configure Ethernet WAN[25]
- Enter a static IP address[26] you've been allocated by your ISP

[24]ADSL stands for Asynchronous Digital Subscriber Line. It is a popular broadband Internet service provided over the telephone system.

[25]Ethernet WAN is a way to access the Internet. Like the name suggests, Ethernet WAN uses Ethernet cabling to connect a building to the Internet, rather than other methods such as ADSL (which uses the phone system).

[26]Each computer on a network has a set of numbers that tells other computers where to find it so they can communicate. This is called an IP address. An IP address has four groups of up to three digits, separated by dots, like this: 123.45.67.012

[27]Wide Area Network. In most cases in this manual, this means the Internet.

Budii™ supports five service modes:

- RFC1483 Bridged mode
- RFC1483 Routed mode
- PPP over ATM (PPPoA)
- PPP over Ethernet (PPPoE)
- MAC encapsulated routing.

Budii™ lets you set up a maximum of eight WAN[27] configurations. To access these settings:

1. Click 5. Advanced Settings.
2. From the navigation menu on the left, click E. Internet setup and ADSL standard.

1. Internet configuration

This modem supports upto 8 connection types. To setup your connection type click on a wan configuration in column 1.

Wan Configuration number	Ethernet or VPI/VCI	Encapsulation	Protocol in use
One	8/35	LLC	PPPoE
Two	– / –	– – –	– – –
Three	– / –	– – –	– – –
Four	– / –	– – –	– – –
Five	– / –	– – –	– – –
Six	– / –	– – –	– – –
Seven	– / –	– – –	– – –
Eight	– / –	– – –	– – –

LAN Settings

This page lets you configure your home network. Here's where you can change things like:

- Budii's IP address
- Your LAN subnet mask
- The range of IP addresses computers and devices can use on your LAN, and the IP address lease time
- Your LAN domain name.

To change your LAN settings:

1. Click the 5. Advanced settings tab.
2. From the navigation bar on the left, click F. Local area network settings.
3. After changing your settings, remember to click Save Settings.

Local Area Network (LAN) settings

1. Set modems IP address (default setting is 10.1.1.1):

   10.1.1.1

2. Set IP subnet mask (default setting is 255.255.255.0):

   255.255.255.0

3. DHCP server

   enabled

4. Set IP address pool range start:

   10.1.1.2

   Set IP address pool range finish:

   10.1.1.254

5. IP address lease time for clients

   One Day

6. Set Domain name here (default is iiNet)

   iiNet

7. Set the Vendor Class Identifier (Option 60) here (default blank)

VLAN Settings

Add a VLAN

1. VLAN description

2. IP Address

   0 : 0 : 0 : 0

3. Subnet mask

   255 : 255 : 255 : 0

4. ☑ IGMP snooping on?

   Activate VLAN

VLANs (Virtual Local Area Networks) split a LAN into multiple parts. Computers on separate VLANs behave as though they are on separate local networks.

Budii™ supports VLANs by associating, or binding, VLANs to LAN ports (Budii™ has four). Computers on an infrastructure connected to, for example, LAN port 1 might be on one VLAN, while computers on an

infrastructure attached to LAN port 2 might be on another.

You can also control the interaction between VLANs using the VLAN access control matrix.

To access the VLAN configuration screen:
1. Click the 5. Advanced Settings tab.
2. From the navigation menu on the left, click G. VLAN settings.

Applications

On this screen, you can:
- Route data between subnets with static routes
- Configure RIP
- Configure SNMP
- Prioritise bandwidth to different applications by configuring QoS (Quality of Service).

To access these settings:
1. Click the 5. Advanced Settings tab.
2. From the navigation menu on the left, click H. Applications.

Firewall

Budii's firewall has several levels of configuration:
- Mask internal IP addresses with NAT (Network Address Translation).
- Set up exceptions for certain applications, such as video conferencing, some games, etc, that would be blocked by NAT.

- Configure computer hosting services that need to be presented with a DMZ.
- Maintain an intrusion detection table for various common attacks.

To configure Budii's firewall:
1. Click the 5. Advanced Settings tab.
2. From the navigation menu on the left, click H. Firewall.

Port forwarding

Port forwarding lets you direct traffic from the outside world through Budii™ and to a destination computer on your home network. For example, if one of your computers is running a web server, you could direct any traffic that comes in through port 80 (the port for http requests) on Budii™, straight to that computer.

You don't always need to set up port forwarding, but in some situations it can be useful.

ABOUT THE PORT FORWARDING TABLE

Here's what the columns mean:
- **Enable:** Tells Budii™ whether or not to redirect traffic for this port. This means you can set up a port forwarding rule and un-tick the Enable box to keep the settings for use at a later date.
- **Description:** A description of the traffic that comes through this port.
- **WAN interface:** Budii™ has up to two interfaces that it presents over the Internet - one is your public IP address for ADSL, ADSL2+, or your NBN/FTTH connection; the other is for mobile broadband, and is only active if you're using a mobile broadband USB modem.
- **Inbound port:** All traffic between your computer and the outside world passes through Budii™, and arrives via a certain inbound port. Traffic that arrives via the port specified here will be forwarded according to the rule you're setting up.
- **Type:** The protocol this type of traffic travels on. For most applications, this will be TCP.
- **Private IP address:** This is the local or internal IP address of the destination computer for this type of traffic - for example, the local IP address of the computer hosting a web server.
- **Private port:** The port on the destination computer to send the traffic through. This must correspond to how you've set it up on the destination computer. For example, if your web server is set up to accept requests through port 80 (the default for web traffic), you'd put 80 here.

SETTING UP PORT FORWARDING

To set up port forwarding, you'll need to find out the Private IP address of the computer you're directing traffic to. In some setups, you'll also need to figure out which Inbound port the traffic comes through, and possibly the Private port, if these have been changed from the defaults. Budii™ will usually take care of the other details by using the defaults.

In this example, we'll set up port forwarding for a web server hosted on one of the computers on your home network. Here's the scenario:

Your computer (internal IP address 10.1.1.4) is running a web server. A computer somewhere on the Internet makes requests to view the pages on your web server. These requests come in via Budii's external IP address on port 80 - for example, http://123.456.789.012:80. We'll set things up so that Budii™ forwards any traffic for port 80 straight to your computer, the web server.

To set up port forwarding:

1. Click the 5. Advanced settings tab.
2. From the navigation bar on the left, click J. Port forwarding.
3. From the Add application dropdown, select an application. For this example, choose HTTP.
4. Click Add. An entry is copied to the port forwarding table.
5. Adjust the WAN interface setting if you need to.
6. At Private IP address, enter the local IP address of the destination computer (the web server). Your port forwarding table should now look something like this:

	Enable	Description	Wan interface	Inbound port	Type	Private IP address	Private port
1	☑	HTTP	pppoe_atm0/ppp0	80	TCP	10.1.1. 4	80

7. Click Save Settings.

You've now set up port forwarding for a web server.

ADDITIONAL NOTES ON PORT FORWARDING

- Some applications use more than one port - for example, VNC, a desktop sharing tool, uses ports 5500, 5800 and 5900. In cases like this, you'll need to set up a rule for each port the application uses, like this:

2	☑	VNC	pppoe_atm0/ppp0 ▾	5500	TCP ▾	10.1.1. 4	5500
3	☑	VNC	pppoe_atm0/ppp0 ▾	5800	TCP ▾	10.1.1. 4	5800
4	☑	VNC	pppoe_atm0/ppp0 ▾	5900	TCP ▾	10.1.1. 4	5900

- Some applications use a range of ports. Here's an example of how to enter a range of ports:

| 5 | ☑ | Age of Empires | pppoe_atm0/ppp0 ▾ | 2300-2400 | TCP ▾ | 10.1.1. 4 | 2300-2400 |

- What if you want to set up port forwarding to, for example, two different web servers on your local network? It's easy to do. In the example below, requests to http://123.456.789.012:80 will go to the web server at 10.1.1.4, while requests to http://123.456.789.012:8080 will go to the server at 10.1.1.5.

	Enable	Description	Wan interface	Inbound port	Type	Private IP address	Private port
1	☑	HTTP 1	pppoe_atm0/ppp0 ▾	80	TCP ▾	10.1.1. 4	80
2	☑	HTTP 2	pppoe_atm0/ppp0 ▾	8080	TCP ▾	10.1.1. 5	80

DELETING ENTRIES FROM THE PORT FORWARDING TABLE

To delete a port forwarding rule:

1. On the Port forwarding page, at Clear entry, select a row to clear.

2. Click Clear.

3. Click OK.

Internet Radio

As an iiNet customer, you have access to our Freezone. When accessed through your iiNet ADSL or NBN/FTTH connection, downloads from Freezone don't count towards your download limit. (Downloads from Freezone via a mobile broadband connection will be charged at your provider's standard data rate.) Freezone includes a range of free radio content - so plug your speakers into Budii™ and enjoy.

Internet Radio

Refresh

You can add stations to "My Play List" by multiple choosing them through "Default Stations" or inserting one record manually through "My Favorite". The max number of the station(s) is 16

General settings

Sync Stations   Sync

Default Stations   Add

STATION NAME

ABC - 612 Brisbane
ABC - 702 Sydney
ABC - 720 Perth
ABC - 774 Melbourne
ABC - Radio National
ABC ClassicFM
ABC News Radio
Triple J Unearthed
ABC Grandstand Sport
ABC ClassicFM
Classical Guitar
Mostly Classical
Strongroom Alive
GeorgeFM HIFI
idobi radio
Radio Wazee

To set it up, here's what you'll need to do:

1. Set up a playlist.
2. (Optional) Add custom radio stations to your playlist.
3. Play your playlist.

SETTING UP A PLAYLIST

To set up your Internet radio playlist:

1. Click the 5. Advanced Settings tab.
2. From the navigation bar on the left, click K. Internet Radio.
3. Click Sync Stations to refresh Budii's list of free radio stations.

Sync Stations   Sync

4. Click on a station to select it, then click Add to add it to your playlist.
5. To remove a station from your playlist, click the

Default Stations   Add

STATION NAME

- ABC - 612 Brisbane
- ABC - 702 Sydney
- ABC - 720 Perth
- ABC - 774 Melbourne
- ABC - Radio National
- ABC ClassicFM
- ABC News Radio
- Triple J Unearthed
- ABC Grandstand Sport
- ABC ClassicFM
- Classical Guitar
- Mostly Classical
- Strongroom Alive
- GeorgeFM HIFI
- idobi radio
- Radio Wazee

Select radio button in the playlist, then click Delete.

STATION NAME	SELECTED	CONTROL
ABC - 774 Melbourne	○	Delete
Strongroom Alive	◉	Delete

6. Follow the process to add a custom radio station or to add radio content from anywhere on the Internet to your playlist. These stations will count towards your download limit.
7. Repeat Steps 4, 5 and 6 as many times as you want to build your playlist.

Adding a custom radio station to your playlist
To add a custom radio station:

> ⊘ Remember, custom radio stations aren't located in our Freezone, and will count towards your download limit when you listen to them.

1. Find the URL[28] of a radio station you'd like to add to your playlist.
2. Click the 5. Advanced Settings tab.
3. From the navigation bar on the left, click K. Internet Radio.
4. Scroll down to the My Favourite section.
5. At Station URL, enter the custom radio station's URL - for example, http://www.radiostation.com.au. Remember to include the http://.
6. At Station Name, give your radio station a name.
7. Click Add.

My Favorite   Add

STATION NAME	STATION URL
Awesome Radio	http://www.awesomeradio.com.au

Your custom radio station is included in your playlist.

[28]A URL (Uniform Resource Locator) tells your computer the exact location of something on the Internet - for example, a web page, or a file. The important thing to remember about a URL is that it needs to include the protocol - for example, http:// or ftp://. An example of a URL is http://iinet.net.au.

PLAYING INTERNET RADIO FROM YOUR PLAYLIST

To play and stop your Internet radio playlist:

1. Click the 5. Advanced Settings tab.
2. From the navigation bar on the left, click K. Internet Radio.
3. Scroll down to the Station Management section.
4. Choose a radio station in your playlist by clicking its Select radio button.
5. Click Play to start listening to that radio station.
6. Click Stop at any time to stop listening.

My Play List [Play] [Stop]

STATION NAME	SELECTED	CONTROL
ABC - 774 Melbourne	○	[Delete]
Strongroom Alive	●	[Delete]
ABC ClassicFM	○	[Delete]
ABC Radio Grandstand (96kbps m3u)	○	[Delete]

CONNECTING YOUR SPEAKERS TO BUDII™

Plug a set of speakers in to Budii™ to listen to the radio. The audio jack on Budii™ supports a 3.5mm audio connection. Most external speakers support 3.5mm. You could also use a male to male 3.5mm audio cable to connect Budii™ direct to an amplifier (your amplifier will need to support 3.5mm input).

To connect speakers to Budii™:
1. Locate the audio port on Budii's rear panel.
2. Plug in your speakers.

IPsec

IPsec is a suite of security protocols that encrypt and authenticate each packet of data transmitted from Budii™.

Using Budii's IPsec features you can:
- Set up secure VPN connections using IPsec in tunnel mode.
- Add up to four IPsec local certificates, to prove your identity to peers.
- Add up to four trusted CA (Certificate Authority) certificates to verify the identity of peers.

To configure IPsec tunnels and certificates:
1. Click the 5. Advanced Settings tab.
2. From the navigation bar on the left, click L. IPsec.

Remember to click Save Settings after making any changes.

IPSec Tunnel Mode Connections

Add, edit or remove IPSec tunnel mode connections from this page.

Enable	Connection Name	Remote Gateway	Local Addresses	Remote Addresses	Configure

Add New Connection

IPSec Certificates

Add, or import certificates.

Local   CA

LED Management

You can personalise the colour and brightness of the LEDs (icons) on the Budii™ panel that show you things like your ADSL connection status, wireless status and information about your answering machine messages.

CHANGING BUDII'S LED COLOUR SCHEME

To change the colour of Budii's front panel LED icons:

1. Click the 5. Advanced Settings tab.
2. From the navigation bar on the left, click M. LED management.
3. Select a colour from the list.
4. Click Save Settings.

Budii's front panel LED icons are updated to the colour you chose.

Retro Red

Grass Green

Ocean Blue

Spring Yellow

Funky Purple

Sky Blue

Classic White
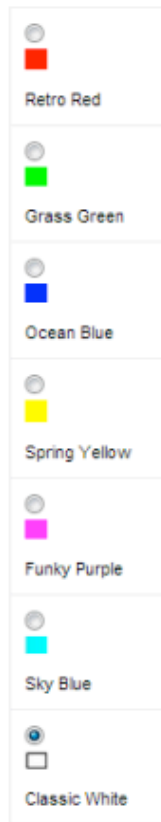
CHANGING BUDII'S LED BRIGHTNESS

To change the brightness of Budii's front panel LED icons:

1. Click the 5. Advanced Settings tab.
2. From the navigation bar on the left, click M. LEDs management.
3. Adjust the LED Brightness slider to a level of your choice.
4. Click Save Settings.

Budii's front panel LED icons are updated.

2. Select LED brightness Level
———————————[slider]———————— 2

LED SEQUENCE ON STARTUP

When Budii™ starts up, you'll see the LED icons described in the Budii™ Overview begin to activate.

1. The ADSL Sync LED flashes until a connection has been established with iiNet, then stays solid.
2. The Internet LED flashes until you've verified your ADSL Username and Password, then stays solid.
3. The Phone icons only light up if:
   • The ADSL Sync and Internet lights are solid, and
   • You have set up and authenticated an iiNet netphone account.

Other LED icons will light up as the feature is used - for example, the USB Storage/Mobile Broadband LED lights up when you have plugged in a USB hard drive or a mobile broadband adaptor.

Handy Tools

Firmware upgrade

Firmware is a type of semi-permanent software, stored on Budii™. From time to time, iiNet may release updates to your modem's firmware. The firmware upgrade tool lets you install these updates. The firmware is available in our Freezone, so it won't count towards your data limit.

To upgrade Budii's firmware:

1. Click the 6. Handy Tools tab.
2. At Firmware upgrade, click Continue.
3. Click the download link.
4. Locate your product and download the firmware file.
5. Click Choose file and locate the file you downloaded.
6. Click Upgrade firmware.

Budii's firmware has been upgraded.

Backup

You can save Budii's settings so they can be restored if you need to reset your modem.

To save your modem settings:

1. Click the 6. Handy Tools tab.
2. At Backup - B1, click Continue.

This creates a file called backupsettings.conf - save it to a safe location that you'll remember if you need to restore Budii's settings.

B. Backup

B1. Save router settings

Your router settings can be saved to your PC. If you need to reset your modem, you can load this file from your PC back on to your modem; this saves you having to reconfigure all the settings on this modem! Select here to save your modem settings...

Continue

B2. Restore your backup file

You can restore your backup file from your PC and re-configure your modem with this save file. Select here to continue...

Continue

To restore Budii™ to settings saved in a backup file:
1. Click the 6. Handy Tools tab.
2. At Backup - B2, click Continue.
3. Click Choose File.
4. Find the backupsettings.conf file and select it.
5. Click Apply.

Budii™ has been restored to the settings saved in the backup file.

Restore

Enter the path and name of the backup file then click the APPLY button below. You will be prompted to confirm the backup restoration.

Configuration file:

Choose File backupsettings.conf

Apply   Cancel

Restart Budii™

Sometimes all it takes to get your Internet connection back up and running is to restart Budii™. We've included a handy way for you to do this.

To restart Budii™:

1. Click the 6. Handy Tools tab.
2. At C1 - Restart, click Continue.

Budii™ will restart. It might take a few minutes for everything to come back online, so be patient.

Restore Budii™ to factory settings

Restoring Budii™ to factory settings will clear all your settings, so if you do this you'll need to go through the setup process again. There are two ways to reset Budii™ to factory settings:

- By pressing and holding the Reset button on Budii's rear panel
- Through the Handy Tools section of Budii's web interface.

To reset Budii™ to factory settings using the Reset button:

1. Make sure Budii™ is powered on.
2. Press and hold the Reset button on Budii's rear panel for 12 seconds (see the Budii™ Overview for a description of the buttons on Budii's rear panel).

Budii™ powers off and restarts. Once it powers up again, all settings are lost and returned to factory defaults.

To reset Budii™ to factory settings using the Handy Tools section of the web interface:

1. Click the 6. Handy Tools tab.
2. At C2 - Restore your modem to factory settings, click Continue.
3. Click Apply.

Restore to factory defaults

To restore the factory default settings of the system, click on the APPLY button. You will be asked to confirm your decision.

Apply   Cancel

Budii™ is restored to factory settings.

DHCP client list

A DHCP client is a computer on your home network that Budii™ has given an IP address[29]. This section lists all the DHCP clients and lets you manage the computers on your LAN. You can:

- Bind an IP address to a computer. This will make sure that the computer always has the same IP address on your home network.
- Change a computer's IP address.
- Manually create a new DHCP client.
- Make a computer release its IP address and get a new one from Budii™. This can help to resolve IP address conflicts on your LAN.

DHCP client list

Client No	IP address	Computer name	Computer MAC address	Wireless or ethernet?	Fix IP address to client?	Release IP address?	Is computer online?
1	10.1.1.2	balgruuf	c3-c3-c3-25-c3-90	Ethernet	☐	Release IP	no

[29]Each computer on a network has a set of numbers that tells other computers where to find it so they can communicate. This is called an IP address. An IP address has four groups of up to three digits, separated by dots, like this: 123.45.67.012

BINDING AN IP ADDRESS TO A COMPUTER

To bind an IP address to a computer on your home network

1. Click the 7. Status and Diagnostics tab.
2. From the navigation bar on the left, click A. DHCP list.
3. Locate the computer in the DHCP client table.
4. Tick Fix IP address to client.

Change a computer's IP address

You can change a computer's IP address if it has been bound.

To change a computer's IP address:

1. In the Release IP address column, click Edit.
2. Type in the computer's new IP address.

> **MAC Address[30] contains the computer's physical address - you should not need to change this.**

---

[30]A MAC address, also known as a physical address, is a way of identifying a computer as a unique piece of hardware. When data travels across a network, each packet of data contains a destination MAC address. If this matches your computer's MAC address, the data gets through to your computer.

Deleting a DHCP client

You can delete any DHCP client with a bound IP address.

To delete a DHCP client:
- In the Release IP address column, click Delete.

Client No	IP address	Computer name	Computer MAC address	Wireless or ethernet?	Fix IP address to client?	Release IP address?	Is computer online?
1	10.1.1.2	balgruuf	c3-c3-c3-25-c3-90	Ethernet	☑	Edit Delete	no

RELEASING A COMPUTER'S IP ADDRESS

To release an IP address

1. Click the 7. Status/diagnostic tab.
2. From the navigation bar on the left, click A. DHCP list.
3. In the DHCP client table, locate the IP address and click Release IP.

This frees up the IP address - Budii™ will give the computer a new one.

Viewing the NAT (Network Address Translation) mapping table

NAT[31] (Network Address Translation) is an Internet technology used to convert between IP addresses inside and outside a local network.

The NAT mapping table shows the current NAPT (Network Address and Port Translation) mappings of Budii™.

In this table you'll see how Budii™ translated the local IP address and port combinations of recent traffic originating from computers on your home network to the external IP address and port of Budii™. You'll also see the Internet destination of the traffic.

To view the NAT mapping table:

1. Click the 7. Status/diagnostic tab.
2. Click B. NAT mapping table.

NAT Mapping Table							
Index	Protocol	Source IP	Source Port	Pseudo IP	Pseudo port	Destination IP	Destination port

|<< | >>| | Refresh

Page: 1/1

Viewing Budii's routing table

All computers and routers using IP networking have a routing table that tells them how to send data to other destinations.

To view Budii's routing table:

1. Click the 7. Status/diagnostic tab.
2. Click C. Routing table.

Table					
Flags	**Network address**	**Netmask**	**Gateway**	**Interface**	**Metric**
U H	203.215.7.251	255.255.255.255	0.0.0.0	ppp0	0
U	10.1.1.0	255.255.255.0	0.0.0.0	br0	0

In this example you'll see that the interface ppp0 (Budii's broadband connection to the outside world) is set up to send any outbound traffic to the IP address 203.215.7.251 - which is iiNet's "next hop" server, the first port of call for sending any traffic through the Internet.

You'll also see that the interface br0 (Budii's wireless interface) is set up to handle any traffic for your wireless network - that is, to send data to any IP address in the range 10.1.1.*.

ADSL monitoring

This page shows you some information about your ADSL connection's performance. You might find this information helpful in troubleshooting any connection or speed issues you're having.

To monitor your ADSL connection:

1. Click the 7. Status and Diagnostics tab.

2. From the navigation bar on the left, click D. ADSL monitoring.

3. See About the ADSL monitoring statistics for more information on the statistics you'll see.

ABOUT THE ADSL MONITORING STATISTICS

Status

ADSL monitoring			Data Rate		
	Configured	Current		Upstream	Downstream
Line status	Automatic	Up	Actual data rate	1023 (Kbps.)	6693 (Kbps.)
Link type	Automatic	G.992.5 (ADSL2+)			

Operation Data / Defect Indication			Statistics		
Operation data	Upstream	Downstream		Transmitted cells	Received cells
Noise margin	10 dB	10 dB	Cell counter	8585073	56181082
Attenuation	28 dB	44 dB			

Indicator name	Near end indicator	Far end indicator
CRC error	7	8
HEC error	12	5

ADSL Monitoring

Line status tells you whether your ADSL connection is up and running.

Link type is the ADSL standard you're using to connect to the Internet - for example, ADSL2+.

Data rate

The actual data rate is an indicator of the speed of your ADSL connection, in Kbps. It's separated into upstream (upload) and downstream (download) speeds.

Operation data/defect indication

The noise margin, also known as a signal-to-noise ratio, tells you how strong your ADSL connection is. Higher numbers indicate a better connection.

Attenuation is an indication of how far you are from your ISP's exchange. Lower numbers indicate a better connection.

CRC and HEC errors are measures of the errors in your data stream due to noise. These errors are detected by:

- Your modem (the far end indicator, for download traffic)
- Your ISP (the near end indicator, for upload traffic).

Lower numbers indicate fewer errors and a better connection.

Statistics

The cell counter is a measure of how much data your Budii™ has transmitted (uploaded) and received (downloaded).

View Budii's history log

This page shows you a history of connection requests made by computers to Budii™.

To view Budii's history log:

1. Click the 7. Status and Diagnostics tab.
2. From the navigation bar on the left, click E. Modem history log.

> **Click Refresh to see new data, or Clear to wipe the log and start recording again. Press Save to download the log to a text file.**

Modem history log

```
Jan  1 00:34:29   <1>10.1.1.2 logout success.
Jan  1 00:34:20   <1>received INFORM
Jan  1 00:34:16   <1>sending ACK to 10.1.1.2
Jan  1 00:34:16   <1>received REQUEST
Jan  1 00:24:25   <1>10.1.1.2 login success.
Jan  1 00:23:28   <1>10.1.1.2 logout success.
Jan  1 00:13:27   <1>received INFORM
Jan  1 00:06:44   <1>received INFORM
Jan  1 00:04:05   <1>10.1.1.2 login success.
Jan  1 00:03:07   <1>10.1.1.2 logout success.
Jan  1 00:02:43   <1>received INFORM
Jan  1 00:00:58   <1>10.1.1.2 login success.
Jan  1 00:00:27   <1>received INFORM
Jan  1 00:00:24   <1>sending ACK to 10.1.1.2
Jan  1 00:00:23   <1>received REQUEST
Jan  1 00:00:23   <1>sending OFFER of 10.1.1.2
Jan  1 00:00:21   <1>received DISCOVER
Jan  1 00:00:21   <1>sending NAK
Jan  1 00:00:21   <1>received REQUEST
Jan  1 00:00:14   BusyBox v1.17.2
```

Save   Clear

Network connection diagnostics

If you're trying to troubleshoot your Internet connection, this page might help. It demonstrates a few simple tests (see the glossary for an explanation of any terms).

PING TEST

Ping is a program that contacts an IP address[32] and sends you its response. This can be useful for troubleshooting your own Internet connection, or testing whether a particular address you're trying to access is down.

To use the ping tool:

1. Click the 7. Status and Diagnostics tab.
2. From the navigation bar on the left, click F. Network connection diagnostics.
3. In the Ping test section, at Destination Address, enter an IP address. For this example, we'll use one belonging to Google (74.125.227.80).
4. Click Execute.
5. Have a look at the results.

   - If you lost packets, it could have been a network error somewhere along the line - so try again.
   - If you consistently fail to receive packets, the address you pinged could be down - try another address to test this.

Ping test

Destination address

[   ]

Execute

Execution result

Destination IP address: is empty
Test result: Stopped

[32]Each computer on a network has a set of numbers that tells other computers where to find it so they can communicate. This is called an IP address. An IP address has four groups of up to three digits, separated by dots, like this: 123.45.67.012

- If you still can't receive packets, there could be a problem with your Internet connection, or your computer's network adapter or firewall.
- High response times could indicate network congestion between you and your destination, or a problem with your Internet connection. Try other IP addresses to test this out.

6. If your ping test reveals problems, use the diagnostic information on this page to help you figure out what's going on - or give our tech support a call.

LAN CONNECTION DIAGNOSTICS

- Testing Ethernet LAN connection checks Budii's LAN[33] ports to see if they're connected.
- Testing Wi-Fi connection checks Budii's Wireless[34] is up and running.

LAN connection diagnostic

Testing ethernet LAN connection: LAN7:FAIL LAN6:FAIL LAN5:FAIL LAN4:FAIL LAN3:PASS LAN2:FAIL LAN1:FAIL
Testing WiFi connection: PASS

---

[33]A LAN (Local Area Network) is a private network, usually set up to connect together the computers in a single home or office. For our purposes, your LAN is your home network.

[34]Wireless technology is a way to connect your computer to your home network and to the Internet without cables. You can also use your modem's wireless features to connect smartphones, tablets, Internet-capable TVs and more.

[35]A USB mobile broadband modem is a small USB device with a SIM card in it that provides broadband Internet access via the mobile network.

[36]A DNS (Domain Name Server) translates website names into IP addresses - numbers that your computer can understand. For example, when you enter "www.iinet.net.au" into a browser, your domain name server translates it to something like "203.173.50.151".

WAN CONNECTION DIAGNOSTICS

- Testing ADSL synchronisation makes sure Budii™ can talk to iiNet's exchange.
- Testing HSPA modem checks your USB mobile broadband modem[35] is working, if it's connected to Budii's USB port.
- Testing WAN connection checks you have Internet access.
- Ping primary domain name server checks whether you can access your primary DNS[36].

> **WAN connection diagnostic**
>
> **Testing ADSL synchronisation:** FAIL
> **Testing HSPA modem:** Not Connected
> **Testing WAN connection:** FAIL
> **Ping primary domain name server:** FAIL

Clone MAC Address

Budii™ allows you to change its MAC address from the one that's been registered. This page helps you set that up.

To change Budii's MAC address:

1. Click the 7. Status and Diagnostics tab.
2. From the navigation bar on the left, click G. Clone MAC address.
3. Use the information at About the settings on this page to make a selection.
4. Click Save Settings.

Clone MAC address

WAN interface MAC address:

- ⦿ Use the gateway's default MAC address
- ○ Use this PC's MAC address:(c3:c3:c3:25:c3:90)
- ○ Enter a new MAC address manually:

| 00 | 00 | 00 | 00 | 00 | 00 |

ABOUT THE SETTINGS ON THIS PAGE

WAN interface MAC address just means Budii's MAC address, as seen by everyone else on the Internet. Here's what the options mean:

- **Use the Gateway's default MAC address:** Budii™ is the Gateway. This option simply retains the MAC address Budii™ had when you took it out of the box.
- **Use this PC's MAC address:** Makes Budii™ present your computer's MAC address to the outside world.
- **Enter a new MAC address manually:** Lets you enter a MAC address for Budii™ to present to the outside world - for example, if you registered a particular MAC address with iiNet, you'd select this option and enter it here.

Status

This page contains lots of information on Budii's broadband connection and wireless network. It might be helpful for troubleshooting any issues you have.

To view Budii's status page:

1.   Click the 7. Status and diagnostics tab.
2.   From the navigation bar on the left, click H. Status.

Here's what the sections mean:

CURRENT TIME AND UPTIME

•   The Current Time is the time set for Budii™.
•   Uptime is the length of time Budii™ has been connected to the Internet without a break. In the example, Budii™ has been connected continuously for 49 minutes and 8 seconds.

> **Current Time:** 2012/11/21 - 11:49:24
> **UPTIME:** 0:0:49:08

INTERNET

This section provides a summary of how you're connected to the Internet, and the configuration of your connection.

•   **ADSL** - A status of "CONNECTED" means there are no problems with your Internet connection.
•   **Mode** - This is the standard or version of ADSL you're using to connect to the Internet.

Internet

ADSL: Connected
Mode: G.992.5 (ADSL2+)
Download: 8064 Kbps
Upload: 1023 Kbps
WAN IP: 168.233.233.123
Subnet Mask: 255.255.255.255
Gateway : 203.215.7.251
Primary DNS : 203.0.178.191
Secondary DNS : 203.215.29.191

- **Download** - The average rate at which you're downloading information from the Internet.
- **Upload** - The average rate at which you're uploading information to other computers on the Internet.
- **WAN IP** - Your IP address, as seen from the outside world.
- **Subnet Mask** - The subnet mask for your WAN IP. The subnet mask tells any device sending data to Budii™ which sections of Budii's IP address to pay attention to. Usually, the Subnet Mask for your WAN IP will be 255.255.255.255, which means "Pay attention to all sections of Budii's IP address".
- **Gateway** - A server belonging to iiNet. Budii™ sends all data destined for the Internet to this address. iiNet then forwards this data to its destination.
- **Primary DNS** - The main server you're using to translate domain names into IP addresses.
- **Secondary DNS** - The backup server you'll use to translate domain names into IP addresses if the Primary DNS isn't available.

GATEWAY

This section gives you some information about how Budii™ manages your local network.

- **IP Address** - Budii's IP address on your home network.
- **Subnet Mask** - Determines the range of IP addresses to allocate to the computers on your home network. In the example, all the computers will have IP addresses between 10.1.1.2 and 10.1.1.254 inclusive.
- **DHCP server** - If enabled, Budii™ will automatically allocate IP addresses to the computers on your home network.
- **Firewall** - If enabled, Budii™ will use the rules in your Firewall setup to protect your home network.

Gateway

IP Address:10.1.1.1
Subnet Mask:255.255.255.0
DHCP Server:Enabled
Firewall:Enabled
UPnP:Enabled
Wireless:Enabled

- **UPnP** - If enabled, computers on your network will be able to find each other automatically.
- **Wireless** - If enabled, you'll be able to connect computers to Budii's wireless network.

WIRELESS

This section summarises your wireless network setup.

- **Wireless** - If enabled, computers can connect to Budii's wireless network.
- **Channel** - The channel (a frequency range) the computers on your home network are using to communicate wirelessly.
- **Wireless devices** - The number of devices connected wirelessly to Budii's home network.
- **Virtual AP1 SSID** - This is your primary network name.
- **Wireless Security** - If enabled, anyone who accesses your primary wireless network will need to authenticate first.
- **Virtual AP2 SSID** - Your secondary network name.
- **Wireless Security** - If enabled, anyone who accesses your secondary wireless network will need to authenticate first.

Wireless

2.4G Wireless:Enabled
Channel:1
Wireless Devices:0
Virtual AP1 SSID:Budiiprimary3AABB1
Wireless Security:Enabled
Security Mode:WPA/WPA2
Virtual AP2 SSID:Budiisecondary3AABB1
Wireless Security:Disabled
5G Wireless:Enabled
Channel:AUTO
Virtual AP SSID:Budii3AABB15G
Wireless Security:Enabled
Security Mode:WPA/WPA2

INFORMATION

This section gives you a summary of details about Budii™ - firmware version, serial number, MAC addresses and more.

- **Numbers of DHCP clients** - the number of computers or other devices that Budii™ has allocated local IP addresses.
- **Code versions** - Budii™ runs a number of software packages; these entries show you their version numbers.
- **LAN MAC Address** - the physical address identifying Budii™ to computers on your wired home network.
- **Wireless MAC address** - the physical address identifying Budii™ to computers on your wireless home network.
- **WAN MAC address** - the physical address identifying Budii™ to computers in the outside world.
- **Hardware version** - Budii's model number.
- **Serial Num** - Budii's individual serial number.
- **Build time** - when Budii™ was set up for the first time.

Information

Numbers of DHCP Clients:0
Runtime Code Version:Budii0001_1106
Boot Code Version:1.0.38-112.118
ADSL Modem Code Version:A2pD035m.d24d
LAN MAC Address:78:A0:51:3A:AB:B1
Wireless MAC Address:78:A0:51:3A:AB:B2
WAN MAC Address:
Hardware Version:A610A354067R
Serial Num:123456
Build Time:2012.11.06-22:30:35

ATM PVC/ETH WAN

This table gives a few more low-level, technical details about your Internet connection(s). Budii™ can have up to eight connections set up.

ATM PVC/ETH WAN

WAN1	WAN2	WAN3	WAN4
VPI/VCI or ETH :8/35	VPI/VCI or ETH:8/35	VPI/VCI or ETH:8/35	VPI/VCI or ETH:8/35
Encapsulation:LLC	Encapsulation:LLC	Encapsulation:LLC	Encapsulation:LLC
Protocol :PPPoE	Protocol:PPPoE	Protocol:PPPoE	Protocol:PPPoE
IP Address :Down	IP Address:Down	IP Address:Down	IP Address:Down
Subnet Mask :---	Subnet Mask:--	Subnet Mask:--	Subnet Mask:--
Gateway :---	Gateway:--	Gateway:--	Gateway:--
Primary DNS :---	Primary DNS:--	Primary DNS:--	Primary DNS:--
Secondary DNS:---	Secondary DNS:--	Secondary DNS:--	Secondary DNS:--
Disconnect	Disconnect	Disconnect	Disconnect
Connect	Connect	Connect	Connect

> **See the Budii™ Overview for a detailed description of the ports, buttons and features of the Budii™ handset and tablet.**

Budii's handset and tablet both act as a fully-functional DECT telephone. They are also wireless-enabled to surf the Internet.

SPEAKERS

Connect a 3.5mm hands free headset to talk over DECT or use external 3.5mm speakers to stream Internet radio or to playback audio files.
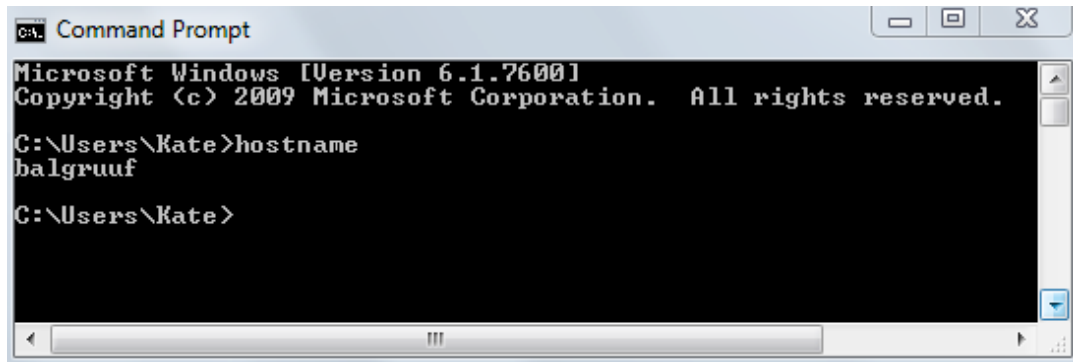
Appendix

Finding a computer's hostname

To find the hostname of a Windows 7 computer:

1. Click the Start button on your Windows 7 desktop.
2. At Search programs and files, type cmd and press Enter.
3. At the command prompt, type hostname.


```
Microsoft Windows [Version 6.1.7600]
Copyright (c) 2009 Microsoft Corporation.  All rights reserved.

C:\Users\Kate>hostname
balgruuf

C:\Users\Kate>
```
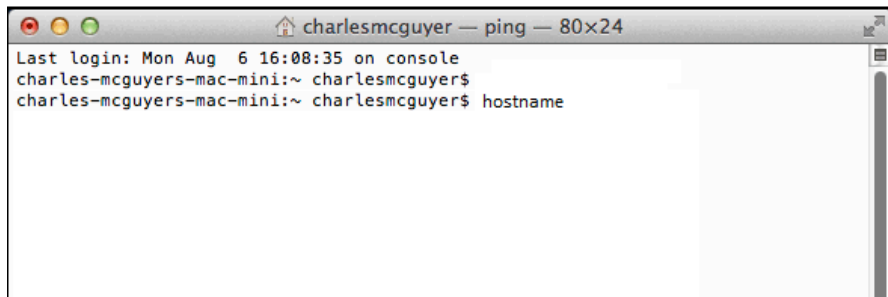
The computer's hostname is displayed.

To find the hostname of a MAC OSX 10.7 computer:

1. From the top-left hand toolbar, click Go.
2. Select Applications, and open the Utilities folder.
3. Open the Terminal utility.
4. At the prompt, type hostname and press Enter.

```
Last login: Mon Aug  6 16:08:35 on console
charles-mcguyers-mac-mini:~ charlesmcguyer$
charles-mcguyers-mac-mini:~ charlesmcguyer$ hostname
```

The computer's hostname is displayed.

Finding a computer's IP address

To find the IP address of a Windows 7 computer:

1. Click the Start button on your Windows 7 desktop.
2. At Search programs and files, type cmd and press Enter.
3. At the command prompt, type ipconfig.
4. You'll see something like the screenshot below. The number you want is the IPv4 Address - in this case, 10.1.1.14.

```
Ethernet adapter Local Area Connection:

    Connection-specific DNS Suffix  . : iiNet
    Link-local IPv6 Address . . . . . : fe80::b8cc:e26f:9d20:c46c%10
    IPv4 Address. . . . . . . . . . . : 10.1.1.14
    Subnet Mask . . . . . . . . . . . : 255.255.255.0
    Default Gateway . . . . . . . . . : fe80::4cc0:39b4:d837:f19%10
                                        10.1.1.1
```

To find the IP address of a MAC OSX 10.7 computer:

1. Click the Apple logo in the top left-hand corner of your screen.
2. Select System Preferences.
3. In the third row down, click Network.
4. Select the Ethernet or Wireless tab, depending on your connection

Your IP address is displayed.

Wi-Fi
Connected

PPPoE
Not Configured

Ethernet
Not Connected

Bluetooth PAN
No IP Address

Status: **Cable Unplugged**

Either the cable for Ethernet is not plugged in or the device at the other end is not responding.

Configure IPv4: Using DHCP

IP Address:

Subnet Mask:

Router:

DNS Server:

Search Domains:

Advanced...
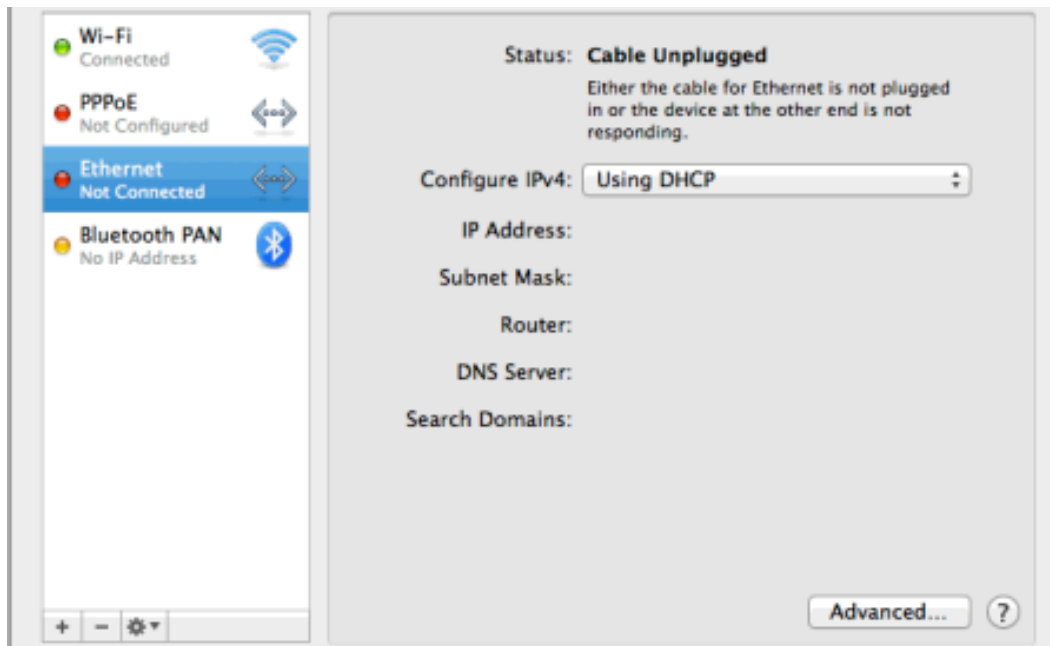
Finding a computer's MAC address

To find the MAC address on a Windows 7 computer:

1. Click the Start button.
2. At Search programs and files, type cmd and press Enter.
3. At the command prompt, type ipconfig /all.
4. In the output, look for the entry Physical Address - that's your computer's MAC address.

```
Ethernet adapter Local Area Connection:

   Connection-specific DNS Suffix  . : iiNet
   Description . . . . . . . . . . . : Broadcom NetXtreme Gigabit Ethernet
   Physical Address. . . . . . . . . : C4-2C-03-20-37-ED
   DHCP Enabled. . . . . . . . . . . : Yes
   Autoconfiguration Enabled . . . . : Yes
   Link-local IPv6 Address . . . . . : fe80::b8cc:e26f:9d20:c46c%10(Preferred)
   IPv4 Address. . . . . . . . . . . : 10.1.1.14(Preferred)
   Subnet Mask . . . . . . . . . . . : 255.255.255.0
   Lease Obtained. . . . . . . . . . : Thursday, 4 October 2012 1:34:47 PM
   Lease Expires . . . . . . . . . . : Friday, 5 October 2012 1:34:45 PM
   Default Gateway . . . . . . . . . : fe80::4cc0:39b4:d837:f19%10
                                       10.1.1.1
   DHCP Server . . . . . . . . . . . : 10.1.1.1
   DHCPv6 IAID . . . . . . . . . . . : 247737347
   DHCPv6 Client DUID. . . . . . . . : 00-01-00-01-15-CA-09-E1-C4-2C-03-20-37-ED

   DNS Servers . . . . . . . . . . . : 10.1.1.1
   NetBIOS over Tcpip. . . . . . . . : Enabled
```

To find the MAC address on a MAC OSX computer:

1. Click the Apple logo in the top left-hand corner of the screen.
2. Select System Preferences.
3. In the third row down, click Network.
4. Select Ethernet or Wireless, depending on your connection type.
5. On the bottom-right hand side of the screen, click Advanced.
6. Select the Hardware tab.

Your MAC address is displayed.
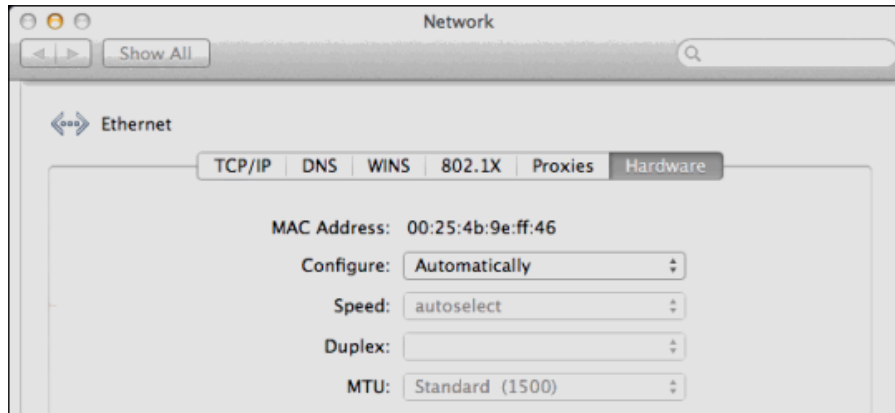
Glossary

3

3G: 3G is the third-generation mobile network.

A

ADSL: ADSL stands for Asynchronous Digital Subscriber Line. It is a popular broadband Internet service provided over the telephone system.

ADSL password: When you sign up for ADSL, you'll get a username and a password. These details prove your identity to iiNet.

ADSL username: When you sign up for ADSL, you'll get a username and a password. These details prove your identity to iiNet.

Answering Machine: This is what we call Budii's call answering service. You can configure Budii™ to pick up a call for you after your phone has rung a certain number of times. Budii™ records the caller's message, along with other details including when they called.

APN: An APN (Access Point Name) is a setting on a phone or some other mobile device that lets you connect from your mobile network to the Internet.

Authentication: Authentication is the process of proving your identity to, for example, your ISP. In this example, to prove to iiNet that you are who you say you are, you'd enter your ADSL username and password. iiNet checks the details and lets you connect if they're correct.

Automatic Logout: Automatic logout means that after a certain amount of inactivity, Budii™ can log you out of its admin settings pages. This is a good security measure, as it prevents someone else from changing your settings if you accidentally leave your computer logged in to Budii's admin pages.

B

Bandwidth: Bandwidth is not quite the same as connection speed, but it's a related concept. If you imagine your Internet connection as a pipe through which data must travel to get to your computer, it's easy to see that a bigger pipe (i.e. a higher bandwidth) allows for, but won't guarantee, better download speeds. Different broadband technologies offer different bandwidths, and hence a different potential speed for your Internet connection.

C

Call Forwarding: Budii's call forwarding system works just like a traditional telephone service with call forwarding. According to your settings, Budii™ can intercept calls to your standard or VoIP phone numbers and send them to a phone number you choose.

Call Waiting: Just like a traditional telephone service, Budii™ can tell you when you have another call coming through by a series of tones. You can then choose to press the Hook Flash button to switch between the call you're on, and the incoming call.

Caller ID Presentation: Similar to a standard telephone line, Budii™ can present the phone number of someone calling you.

Codec (Voice): A voice codec translates the analogue signal of a human voice into a digital format that can be transmitted over a computer network. There are a few different ways to do it, and each has its own advantages and drawbacks.

Computer Name: See Hostname

D

DDNS: In some cases, the IP address iiNet gives you can change. Signing up for a DDNS (Dynamic DNS) service lets you use a domain name instead of an IP address. This can help you to use Budii's remote features.

DECT: DECT (Digital Enhanced Cordless Telecommunications) is the technology behind cordless telephones. Throughout the Budii™ admin pages and this manual, you may see cordless phones called "DECT handsets".

DHCP Client: A DHCP client is any computer or device that gets an IP address and settings from a DHCP server. Basically, if Budii's DHCP server is enabled, this means a DHCP client is any computer, tablet, phone, TV, etc on your home network.

DHCP Server: Among other things, a DHCP (Dynamic Host Configuration Protocol) server automatically gives out IP addresses to computers that connect to your home network.   By default, Budii™ runs a DHCP server. Budii's DHCP server allocates, refreshes, releases and renews IP addresses, and gives the connecting computers the settings they need to work on your home network. If you disable Budii's DHCP server, you'd need to configure each computer's network settings individually and pick IP addresses for them yourself.

Dial Tone: For a standard telephone service, a dial tone indicates that your phone line is working and ready to make calls. Checking for a dial tone is a good basic troubleshooting step for an ADSL service.

DMZ: A DMZ (Demilitarized Zone) is a computer that's set up to expose services to the Internet. In creating a DMZ, we separate the computer providing the external services from the computers on your home network. This means that a security compromise on a computer in your DMZ would not put your home network at risk.

DNS: A DNS (Domain Name Server) translates website names into IP addresses - numbers that your computer can understand. For example, when you enter "www.iinet.net.au" into a browser, your domain name server translates it to something like "203.173.50.151".

Domain Name: A domain name is a human-readable name attached to a set of one or more IP addresses.

DTMF: DTMF (Dual-tone multi-frequency) signalling are the tones you hear when pressing buttons on your phone. Each tone represents a number or symbol.

E

Ethernet: Ethernet is a standardised way to connect computers to a modem using physical cables. It's the most common way (along with wireless) to set up a home network, and is also known as a "wired" connection.

Ethernet WAN: Ethernet WAN is a way to access the Internet. Like the name suggests, Ethernet WAN uses Ethernet cabling to connect a building to the Internet, rather than other methods such as ADSL (which uses the phone system).

F

Firmware: Firmware is a kind of semi-permanent software. Most modems (including Budii™) have firmware that can be updated to keep it running smoothly and provide new features. From time to time iiNet will also release new firmware for the Budii handset or Tablet. This is an automatic process and the handset or tablet, if connected to Wi-Fi, will be notified of a new firmware and display a message on the screen whereby the user can select to download and automatically install the new firmware.

FTP server: FTP stands for File Transfer Protocol. An FTP server is a computer that's specially set up to allow other computers to upload and download files.

FTTH: FTTH stands for Fibre to the Home. It's a broadband service that works by running optical fibre right up to your house.

FXS: In this manual and in the Budii™ setup screens, FXS (Foreign eXchange Subscriber) refers to a fixed telephone wall socket. FXS provides a dial tone.

G

Gain Control: In Budii's VoIP system, this is the volume of the voice signal carried by your phone handsets. You can adjust the volume gain if you're having trouble hearing people or being heard on VoIP calls.

Gateway: In the context of this manual, Budii™ is your gateway. This means Budii™ is the link between your computer or home network, and the Internet.

H

Hook Flash: Hook flash is a feature that allows you to switch between one call and another - for example, during call waiting.

Hostname: Within your home network, a hostname is like a nickname for an individual computer or device. It's a human-readable name that corresponds to an IP address. You might see this name referred to as a "hostname", "computer name" or simply "name". In some of Budii's advanced setup screens (for example, enabling filtering rules), you'll see devices on your home network referred to by these names, such as "finn_laptop" or "android_234234".

I

IP address: Each computer on a network has a set of numbers that tells other computers where to find it so they can communicate. This is called an IP address.   An IP address has four groups of up to three digits, separated by dots, like this: 123.45.67.012

ISP: An ISP (Internet Service Provider) gives you access to the Internet. If you've signed up for ADSL with iiNet, we are your ISP.

IVR: IVR (Interactive Voice Response) is a technology that uses voice recognition and keypad tones to help a user navigate, for example, a phone menu system.

L

LAN: A LAN (Local Area Network) is a private network, usually set up to connect together the computers in a single home or office. For our purposes, your LAN is your home network.

Local IP Address: A local IP address is the internal IP address of a computer on your home network (your LAN).

M

MAC Address: A MAC address, also known as a physical address, is a way of identifying a computer as a unique piece of hardware. When data travels across a network, each packet of data contains a destination MAC address. If this matches your computer's MAC address, the data gets through to your computer.

MAC Address filter: A MAC address filter lets you restrict access to your home network or to the Internet by allowing or disallowing a physical computer from connecting, based on its MAC address.

MAC filtering: MAC filtering is blocking or allowing computers on a network, using their MAC address to identify them. See also MAC address.

Modem Password: Your modem password is Budii's admin password. By default, it's set to "admin". This password gives you access to Budii's settings.

N

Name: See Hostname

NAT: NAT (Network Address Translation) is a technology that Budii™ uses to convert between IP addresses used over the Internet, and IP addresses used on your home network.

NBN: NBN is Australia's planned National Broadband Network. Its aim is to gradually replace services that run over the phone system (such as ADSL) with optical fibre and satellite Internet services.

P

PBC: See WPS.

Phone Mapping: Phone mapping is the process of assigning handsets to phone lines - for example, assigning DECT handsets to ring when someone calls your VoIP line.

Physical Address: See MAC address

PIN: Personal Identification Number. Some devices have this as a security measure to help connect to wireless networks. See WPS for more information.

Port: A port sorts traffic coming to and from a computer's IP address by the type of traffic being sent. For example, when one computer contacts another to retrieve a web page, this type of traffic uses port 80 - the standard port for web pages. FTP requests, on the other hand, use port 21. Using ports to separate the traffic means that many applications and services can run over the same IP address.

Port Forwarding: Port forwarding lets you direct Internet traffic through Budii™ and to a destination computer on your home network. Budii™ chooses the destination computer based on the port the traffic arrived on, and the rules you've set up for that port.

Pre-shared Key: A pre-shared key is a password or a passphrase that helps you connect to a secure, encrypted wireless network.

PSTN: The PSTN (Public Switched Telephone Network) is the infrastructure that we all use when making mobile and land-line phone calls.

R

Reboot: See Restart.

Remote Management: Remote management is a feature that lets you log in to your modem from the Internet and control it just like you would at home. This feature needs to be manually set up and secured.

Reset: Resetting your modem returns all the settings back to the way it was when you first took it out of the box. The modem will need to be set up again from the beginning.

Restart: Restarting your modem simply means turning it off and then on again. It's the same as rebooting, and very different from resetting.

S

Server: A server is a computer that's specially set up to provide some service to clients connecting to it. For example, a web server is set up to provide web pages. When you navigate to a website with your browser, a web server finds the page you want and "serves" it up to you by sending it to your computer.   There are many different kinds of servers. Some provide gaming services, others host databases, and so on.

SIM card: A SIM (Subscriber Identification Module) card sits in your mobile phone and stores all the information you need to connect to your mobile network, including your phone number and an authentication key.

SIP: SIP (Session Initiation Protocol) is part of the technology used for VoIP. SIP sets up, manages and disconnects calls in a VoIP system.

SIP Proxy: A SIP proxy is one part of your VoIP provider's equipment. Its job is to help set up VoIP calls by forwarding your request to connect to a computer closer to your call's destination.

SIP Registrar: A SIP registrar matches your SIP username to your IP address for a defined period of time, so that you can make and receive VoIP calls.

SIP URI: A SIP (Session Initiation Protocol) URI (Uniform Resource Identifier) tells computers in a SIP network where to find resources, like a voicemail box or a user. A SIP URI looks like this: sip:username:password@ host:port

SIP Username: A SIP username is a display name that identifies you on a VoIP system and allows SIP (the back-end technology of VoIP) to set up calls for you.

SRV Record: A Service Record (SRV record) is an entry in the DNS (Domain Name System). For SIP registration, an SRV record associates a computer's IP address with a SIP username so that you can make and receive VoIP calls.

SSID: SSID stands for Service Set Identifier. It can also be seen as the name of your local wireless network. All computers and devices using your home wireless network need to be using this same SSID in order to connect.

U

UPnP: UPnP (Universal Plug and Play) is a technology that allows computers and other devices on your LAN to find each other automatically.

URL: A URL (Uniform Resource Locator) tells your computer the exact location of something on the Internet - for example, a web page, or a file. The important thing to remember about a URL is that it needs to include the protocol - for example, http:// or ftp://. An example of a URL is http://iinet.net.au.

USB Mobile Broadband Modem: A USB mobile broadband modem is a small USB device with a SIM card in it that provides broadband Internet access via the mobile network.

USB Port: A USB port is a physical connection on your computer into which a USB device can be plugged. Budii™ has one - you can connect a USB modem or a USB hard drive to it.

User-Agent Header (SIP): A SIP User-Agent Header tells the equipment in a VoIP system what hardware setup you're using to make calls.

V

VAD: VAD (Voice Activity Detection) is a technology used in VoIP that helps to conserve bandwidth by only transmitting audio data when your modem detects human speech.

Vanity: A Vanity code is also known as a Phoneword. Phonewords are used by some businesses to help people remember their phone numbers, by using letters associated with the numbers on a telephone keypad to spell words.

VLAN: A VLAN (Virtual LAN) is a way of separating computers on the same physical LAN into two different networks.

VoIP: VoIP stands for Voice over Internet Protocol. Using VoIP you can make phone calls over the Internet, instead of the phone line.

VoIP SIP Domain: The domain iiNet sets up for VoIP communications - for example, iinetphone.iinet.net.au.

VoIP SIP Server: A piece of equipment that sets up, manages and disconnects VoIP calls.

VoIP username/password: When you sign up for VoIP services, you'll get a username and password. These details prove your identity to iiNet's VoIP service equipment.

W

WAN: Wide Area Network. In most cases in this manual, this means the Internet.

WAN interface: A piece of equipment inside Budii™ that handles physical access to the Internet.

WAN IP address: Your external IP address, as seen from the outside world. This is the address that other computers on the Internet need to communicate with yours.

WDS: A WDS (Wireless Distribution System) extends your home network with wireless base stations instead of Ethernet cables. All base stations in a WDS must be configured to use the same radio channel, encryption method and encryption keys. They may be configured with different SSIDs (Service Set Identifiers).

Web server: A web server is a computer that's set up to host websites.

WEP: WEP (Wired Equivalent Privacy) is one way of securing a wireless network. It's not as secure as WPA (Wi-Fi Protected Access), but Budii™ supports it because some older wireless devices aren't capable of using WPA.

Wi-Fi: See Wireless.

Wireless: Wireless technology is a way to connect your computer to your home network and to the Internet without cables. You can also use your modem's wireless features to connect smartphones, tablets, Internet-capable TVs and more.

Wireless Access Point: A wireless access point is a piece of hardware that allows computers to connect to a wireless network.   You can have multiple access points set up for the same network. An example use of this is to extend your wireless network's signal strength by placing an access point at the other end of your house from Budii™, for example.

Wireless Channel: Wireless technology uses high-frequency radio waves. A wireless channel is simply a defined frequency range. Using different channels to nearby wireless networks can help to reduce interference.

Wireless LAN: Sometimes you'll see this written as "WLAN". A wireless LAN is simply a local or home network that uses wireless technology - see Wireless for more information.

Wireless Password: Your wireless password is the passphrase set up for connecting to Budii's wireless network. This is different from your ADSL password - see the Setting up Wireless section for more information.

Wireless Protocol: A wireless protocol is a standard used by the makers of wireless technology to specify how wireless communications should work. You might see wireless protocols mentioned, such as 802.11 or 802.11g and so on.

WPA: WPA (Wi-Fi Protected Access) is a method for securing wireless networks. It's more secure than its predecessor, WEP (Wired Equivalent Privacy).

WPA2-802.1x: WPA2-802.1x is a version of WPA (Wi-Fi Protected Access) that works with an authentication server. It's commonly used in enterprise networking setups.

WPA2-PSK: WPA2-PSK is a method for securing a wireless network. It stands for Wi-Fi Protected Access 2 - Pre-Shared Key. It's sometimes called WPA2 Personal because it's best used in home networks. This is the default security method that Budii™ uses to secure your wireless network. It works using two pieces of information:
* A passphrase * Your network name (SSID) to generate unique encryption keys for every computer on your network. To maintain the security of your network, this security method constantly changes these encryption keys. This is much more secure than WEP (Wired Equivalent Privacy), which only uses one static encryption key for every computer on your network.

WPS: WPS (Wi-Fi Protected Setup) is an easy and secure way to connect a device to a wireless network. The only catch is that the device has to support WPS (most modern computers and devices do). There are two ways WPS can work: 1. Pushing the WPS button on the device and the modem. This is called "PBC" - Push Button Configuration. 2. Entering the device's PIN into the modem. Either way, WPS lets you skip configuring SSIDs and wireless passphrases.

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