NOKIA
A040/A04I

Wireless LAN Adapter
Getting Started

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CONNECTING PEOPLE

Copyright notices

Welcome

This guide tells you how to use a Nokia A040/A041 wireless LAN adapter to provide wireless communications between a standalone device (with no wireless capabilities) and an existing LAN (managed by a Nokia A032 or equivalent wireless LAN Access Point).

Please read the *Important Safety Information* before using your Wireless LAN Adapter. Failure to comply with these guidelines may be dangerous or illegal.

How to use this guide

This guide gets you up and running quickly with your A040/A041. It contains the following information:

- How to connect the adapter to a standalone computer
- How to test that the adapter can communicate wirelessly with an existing LAN
- What to do if the simple test fails.

Related documentation

If you need to be able to configure the A040/A041, please see the *A040/A041 Advanced User Guide*, supplied in Acrobat PDF format on the accompanying CD-ROM, which explains:

- How to use a desktop or laptop PC to perform optional configuration via a direct Ethernet or USB connection
- How to monitor and make advanced configuration changes remotely, using a suitably privileged network station.

Please see the documentation that came with your Access Point for details on managing a wireless network.

Important information

This guide contains information and instructions relating to two **separate and distinct** products:

- Nokia A040 – an Ethernet-only device
- Nokia A041 – a USB-only device.

For the most part, this guide applies to both product variants. Where appropriate, information that is specific to either USB or Ethernet will be highlighted as such. You can **only** connect a Nokia A040 to an Ethernet device, and you can **only** connect a Nokia A041 to a USB device.

Conventions used in this guide

Your A040/A041 can transfer information between a standalone computer and an existing LAN.

Notes

You'll find tips or other useful facts in side notes throughout the manual. Pay particular attention to notes that start with **Note** or WARNING.

Text conventions

We use the following conventions:

- `courier` is used for file names, or to denote text that appears on your screen
- **`courier bold`** is used to denote text that you should type in
- new terms are shown in *italic* text the first time they appear
- **bold** text denotes the name of a physical button or LED on the adapter (e.g. the **alert** LED) or a button on screen that you need to click (e.g. "click **Restart**").

Features

The A040/A041 has the following features:

- Built-in wireless LAN adapter card to communicate with an Access Point
- Automatic operation – can work as delivered, with no reconfiguration
- Custom operation – can be reconfigured to add security, modify your network setup or perform upgrades
- IT environment – can be monitored and controlled remotely in a managed environment
- Supports IEEE802.11 Infrastructure or Peer-to-Peer (ad-hoc) modes
- Automatic connection to any Access Point regardless of network name (optional)
- Can be configured to look for a specific network name
- Software-configurable sound indicator.
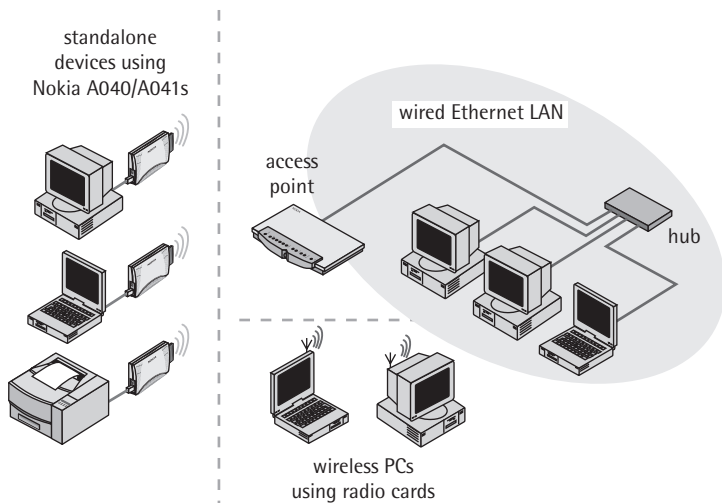
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A040/A041 Getting Started

1. Overview

Nokia A040 and Nokia A041 Wireless Lan Adapters allow you to connect standalone computers to an existing wired/wireless LAN that is managed by an IEEE802.11-compliant Access Point.

You can also use the adapters to access Ethernet- or USB-equipped resources such as printers and scanners:

standalone
devices using
Nokia A040/A041s

wired Ethernet LAN

access
point

hub

wireless PCs
using radio cards

Checklist

After unpacking the adapter, check the contents against the packing list. The components listed below are included:

- This User Guide
- Nokia A040 Wireless LAN Ethernet Adapter
  or
  Nokia A041 Wireless LAN USB Adapter
- Ethernet or USB cable, as appropriate
- Power supply
- Nokia A040 or Nokia A041 Utilities CD-ROM.

Connectors

WARNING: *Use of a power adapter other than that supplied with the unit could be unsafe.*

The adapter has the following connectors:

power connector
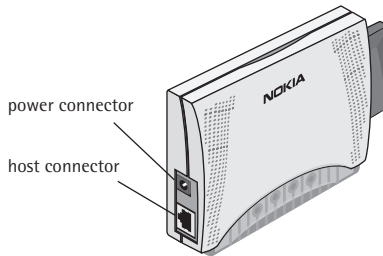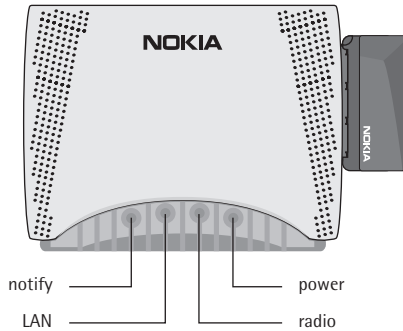
host connector

- **Power connector** – This is where you connect the power unit. Only use the power unit supplied with the A040/A041.
- **Host connector** – This is either an RJ45 Ethernet connector (Nokia A040) or a USB connector (Nokia A041).

LEDs

The adapter has the following LEDs:

- **power**
  - Normally this shows green
  - Solid red indicates a fault
  - Flashing red/green – memory update.
- **radio** – This indicates activity on the wireless LAN connection:
  - On – Connected, but no traffic
  - Flashing intermittently – Connected, and there is network traffic.
- **LAN** – Illuminated when there is a good connection to the host device.
  - Off – Not connected
  - On – Connected, but no traffic
  - Flashing intermittently – Connected, and there is network traffic.
- **notify** – Used with the **LAN** LED to indicate connection status to Access Point (see below).

Special LED/sound sequences

The A040/A041 also has an internal speaker. It emits sounds in conjunction with special LED sequences:

Power-on

At power-on, the following things happen:

1 The A040/A041 emits a three-tone chirp.

2 The **LAN** LED lights (assuming there is a LAN connection).

3 The **notify** and **radio** LEDs flash together and the adapter beeps for up to 10 seconds while the adapter scans for an Access Point.

4 If a connection is made to an Access Point, the adapter emits a three-tone chirp, the **notify** LED goes out and the **radio** LED stays on.
   If the adapter fails to connect to an Access Point, the beeps stop but the **notify** and **radio** LEDs continue to flash together.

Access Point connection lost

If the connection with an Access Point is lost for any reason:

1 The **notify** and **radio** LEDs flash together (they keep flashing until a connection is regained).

2 The adapter emits beeps for five seconds.

Access Point connection regained

If the connection with an Access Point is regained:

1 The **notify** and **radio** LEDs stop flashing.

2 The adapter emits a three-tone chirp.

3 The radio LED stays on solid if there is no activity, or flashes intermittently if there is.

New configuration applied

If you alter and save any configuration settings:

1 The **power** LED flashes red and green.
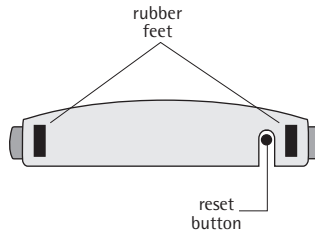2 The adapter emits a three-tone chirp.

Set-up mode entered

If you put the adapter into set-up mode (see the *Advanced User Guide*, supplied as an Acrobat PDF file on the CD-ROM):

1 All the LEDs come on, then go out again.
2 The unit makes an intermittent beeping sound.
3 Note that the **notify** and **radio** LEDs do not flash (as the adapter is not attempting to connect to an Access Point).

Reset button

The adapter has a reset button hidden on its underside:

You use this to put the unit into set-up mode (see the *Advanced User Guide*, supplied as an Acrobat PDF file on the CD-ROM).

2. Getting started

For many applications the A040/A041 will work straight out of the box with no configuration changes. This chapter explains how to:

- Install USB driver software (Nokia A041 only)
- Connect an adapter to a host computer and check it's working properly.

If the operational test fails, *Troubleshooting* on page 25 explains how to determine whether you need to reconfigure the adapter from its factory default state before it will work on your network.

Minimum host computer requirements

In order to work correctly, any computer connected to the A040/A041 must satisfy the following minimum requirements:

Nokia A040
- Ethernet network interface card (NIC) with 10BaseT connection
- Associated Ethernet drivers installed, as specified by the manufacturer of the NIC
- Windows 95, 98, 2000 or NT.

You may also need an RJ45 adapter for use with a PCMCIA Ethernet card

With the Nokia A040, you can also use non-Windows devices that support TCP/IP over Ethernet.

Nokia A041
- A USB connection
- Nokia A041 – Must have the Nokia A041 USB driver software installed (see page 17)
- Windows 98 or 2000.

Note*: Windows 95 and Windows NT do not support USB plug and play.*

Installing USB driver software (Nokia A041)

You need to install the USB driver software onto each host computer that will use a Nokia A041:

1   Insert the Nokia A041 Utilities CD-ROM into the host computer's CD drive.

    The Nokia Utilities application should run automatically – you'll see the following screen after a few seconds:
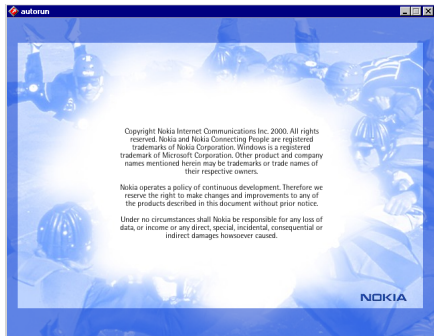
2   Double-click on the copyright text to display the Nokia License Agreement:
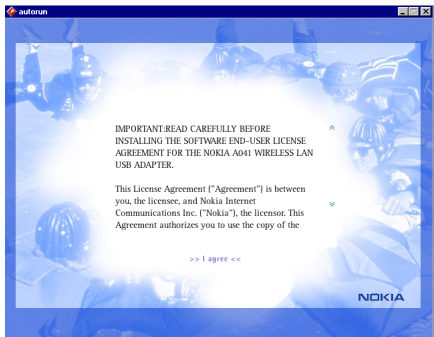
3 Read the License Agreement and click
>> **I agree** << at the bottom of the page to
display the CD-ROM home page:

4 Click **Install Nokia A041.**

**5** You'll see the installation options at the
bottom of the page:

6 Connect the power unit to the Nokia A041's
power connector and to a wall outlet.

7 Connect the USB cable to the adapter's host
connector.

8   Connect the other end of the USB cable to the host computer.

9   Switch on at the wall outlet.

10 Click **Install USB Drivers**.

    Windows will detect new hardware and search for the software for it.

11 Allow Windows to search for the best driver.

12 If you are prompted to supply the driver, follow the on-screen instructions and direct the installation to the CD-ROM. The driver files are then copied.

    You should then be notified that the installation has been successful.

13 Reboot your machine when prompted.

Connecting and testing the A040/A041

The simplest method of testing the adapter is to use the configuration shown here:
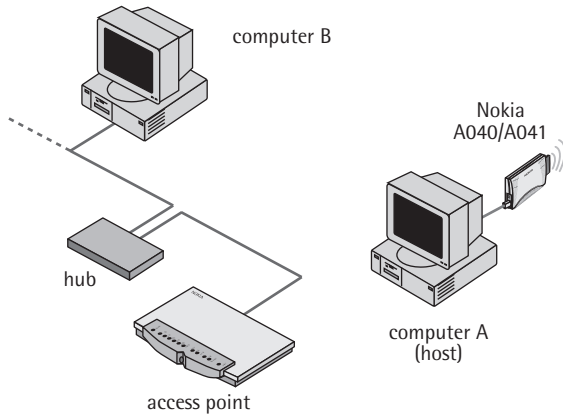
## Using the adapter in a TCP/IP environment

This section explains how to connect and test the A040/A041 on a TCP/IP network. If you do not use TCP/IP, please see *Testing on a non-TCP/IP network* on page 24.

Computer A (the host) and computer B should both be configured to use TCP/IP and have fixed IP addresses.

We'll refer to the IP address of computer A (the host) as IP-A and the IP address of computer B as IP-B.

1 Check and write down IP-A and IP-B.

2 Switch off computer A (the host).

3   Make sure that the Access Point, computer B and the hub are operating normally.

4   Connect the power unit to the A040/A041's power connector and to a wall outlet.

5   Connect the Ethernet cable (Nokia A040) or USB cable (Nokia A041) to the adapter's host connector.

6   Connect the other end of the Ethernet or USB cable to the host computer.

7   Switch on at the wall outlet.

8   Switch on the host computer.

power connector

host connector
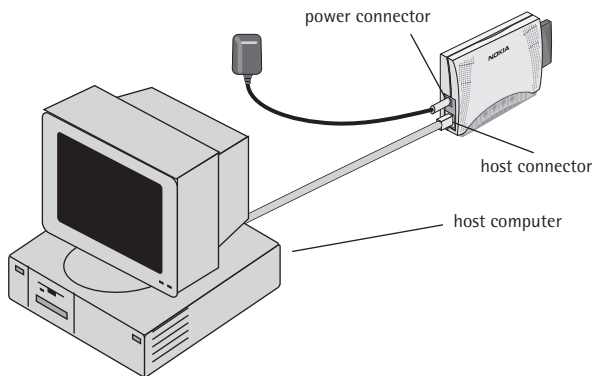
host computer

After the host computer has powered up, the adapter's **power** LED should glow a steady green, and its **LAN** LED should be on, indicating a good connection to the host computer.

The adapter will start beeping as it searches for an Access Point. After a short while the beeps should stop and the adapter will emit a chirp (three rising tones) indicating that a connection has been made.

9　If the beeps stop but there is no chirp, and the **radio** and **notify** LEDs continue to flash together, it means that the A040/A041 is unable to find an eligible Access Point, or that the Access Point will not allow a connection. See *Troubleshooting* on page 25.

10　(**DHCP only**) When the A040/A041 has stopped beeping you should use the IPConfig utility under Windows to renew the IP address information in Computer A and Computer B (see page 23). Make a note of the IP addresses assigned for use later in the testing.

Note: *You only need to perform this step if your network uses automatic IP address assignment (DHCP).*

11　On Computer B, open an MS-DOS console window.

12　At the prompt, issue a 'ping' command to the IP address of Computer A. For example, if IP-A is 192.168.5.21, you would enter:

```
ping 192.168.5.21
```

Successful ping

If the 'ping' is successful, you should see an output of the following form:

```
C:\> ping 192.168.5.21

Pinging 192.168.5.21 with 32 bytes of data:

Reply from 192.168.5.21: bytes=32 time=1ms TTL=32
Reply from 192.168.5.21: bytes=32 time<10ms TTL=32
Reply from 192.168.5.21: bytes=32 time<10ms TTL=32
Reply from 192.168.5.21: bytes=32 time<10ms TTL=32

C:\>
```

Your A040/A041 is operating correctly, and you don't need to perform any special configuration to make it work.

Unsuccessful ping

If there is a problem, you'll see the following output:

```
C:\> ping 192.168.5.21

Pinging 192.168.5.21 with 32 bytes of data:

Request timed out.
Request timed out.
Request timed out.
Request timed out.

C:\>
```

See *Troubleshooting* on page 25 for possible problems and solutions.

Renewing IP address information

If you're using DHCP and you need to renew the IP address information on a computer, follow the instructions in this section.

Under Windows 95/98

Under Windows 95/98, you do this using WinIPcfg:

1   Choose **Run** from the **Start** menu.
2   Enter **WinIPcfg** and press **Return**.
3   Select the correct adapter card in the pull-down menu.
4   Click **Release**.
5   Click **Renew**.

Under Windows 2000/NT

1   Open a DOS prompt.

2   Enter **ipconfig /release**

    This will release the old address.

3   Enter **ipconfig /renew** to renew the
    address.

You should now be able to access the Access
Point from your client machine.

Testing on a non-TCP/IP network

If you do not use TCP/IP you can still follow
the instructions in *Using the adapter in a TCP/
IP environment.* When the A040/A041 stops
beeping, indicating a connection has been
made to the Access Point, you can try
transferring a file between Computer A and
Computer B in order to verify that the system is
operating.

Troubleshooting

If the 'ping' test fails and your host computer cannot communicate with a known station on the wired LAN, check the table below, which lists some possible problems and solutions:

If...	...do this
You entered the IP address incorrectly in the ping test	Try the ping test again.
The A040/A041 is beeping continuously	Check that the Access Point is within range and functioning correctly.
You have multiple Access Points, using different Network Names	Decide which network name you want to connect to and configure the A040/A041 with that name.
Your Access Point is using WEP encryption	You'll need to configure the A040/A041 with the correct WEP mode and encryption keys to allow access.
Nokia A040: Your host computer has incorrect Ethernet drivers installed	Install the Ethernet NIC as if you were intending to connect to a regular LAN hub.
Nokia A041: Your host computer is running Windows 95 or Windows NT	Upgrade to Windows 98 or Windows 2000 or use a different host.
Nokia A041: You forgot to install the Nokia A041 USB driver software on your host computer	Install the drivers from the supplied CD-ROM.

Some solutions involve reconfiguring the adapter – you'll need to follow the instructions in *Preparing to configure an adapter* and *Configuration parameters* in the *Advanced User Guide*

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