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→ Comments welcome on the Networks column.

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Vista revisited

A tour round some network map features of Windows Vista

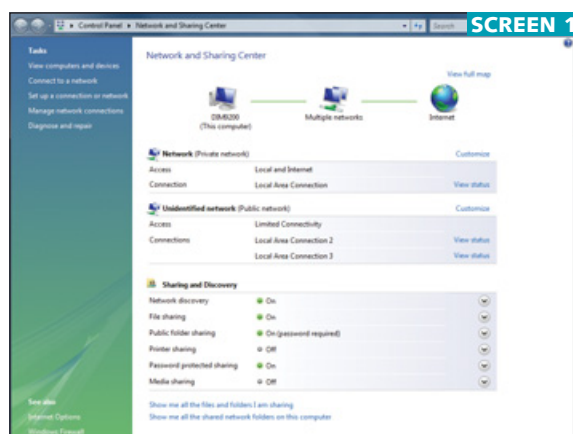
As mentioned last month, I've recently acquired a couple of Vista PCs with the object of working my way around the networking features and sharing those experiences in my Networks Hands On column. In the last issue, I started the ball rolling with file-sharing. This month it's a more eclectic collection of hints and tips, with a look at the new Vista network map feature.

Mapping the Lan

Network maps are to be found in the Network and Sharing Center which, if you're new to Vista, is one of the tools you'll quickly become familiar with, mainly because it provides a one-stop shop from which you can access most of the other common networking utilities included as part of the new operating system.

The Network and Sharing Center can be found in the Control Panel, although that's far from the quickest or easiest way of running it. Indeed, it's better to click the network status icon in the system tray and select it from the pop-up menu displayed, or right-click the Network entry in the Start menu and choose Properties. Alternatively, if you need to run this tool on a regular basis, drag its icon from the Control Panel and create a shortcut on the desktop.

Whichever way you start it, open the Network and Sharing Center. At the top you'll see a graphical map illustrating just where your PC sits on the network and how it connects to the internet (see Screen 1). It's not particularly informative, especially if you've only got the one PC. However, click the View full map link alongside and, on a larger network, Vista will attempt to identify as many devices as it can and draw a map showing how these all connect together, which can be very useful



when it comes to troubleshooting or locating resources. Double-click the icon of a PC or server on the map, for example, and you'll be given access to its file and printer shares.

In order to build this map Microsoft has introduced a new protocol called Link Layer Topology Discovery (LLTD), support for which is built into Vista and will also be in Windows Server 2008 when it ships. However, although devices that don't have LLTD can still be found and identified they won't be mapped, just listed underneath the map as connected to the network (see Screen 2), where you'll see that a Buffalo Linkstation appliance has been discovered but can't be placed in the topology. The same also applies to PCs running older versions of Windows, such as the XP Pro PC also listed, although an LLTD Responder is available for Windows XP, which will allow such systems to be included in the Vista maps.

The LLTD Responder for XP is available for download from the Microsoft website – look for Knowledge base article KB922120 (<http://support.microsoft.com/kb/922120>). It's very easy to install and can be used on either Windows XP Professional or Home Edition to

enable the host PC to be included in the Vista maps.

In screen 3 you can see that the PC called XProPC has had the responder installed and is now shown as connected to the network rather than unplaced as in the previous screen. The network switch has mysteriously been reclassified as a hub, although it's still the same device and hasn't been changed in any other way!

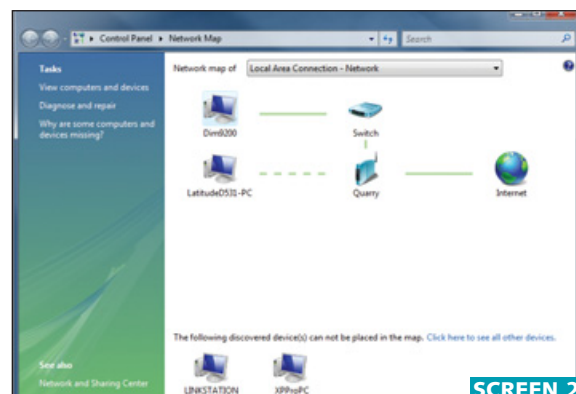
Unfortunately, there's no responder for earlier versions of Windows, or for non-Windows platforms and devices, such as the Linkstation Nas appliance shown in the screenshots. However, Microsoft has made its source code available along with a reference Linux implementation, with the aim of encouraging third-party developers to provide LLTD support.

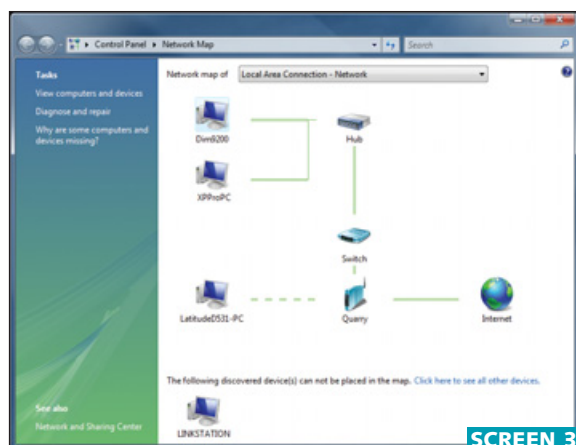
Non-broadcasting wireless

As can be seen from the screenshots, wireless networks can also be included in the Vista maps, with wireless management tools available via the Network and Sharing Center. There are also a number of behind-the-scenes wireless networking enhancements, one of which is improved support for non-broadcasting access points and routers, although problems can still arise if you want to connect to this

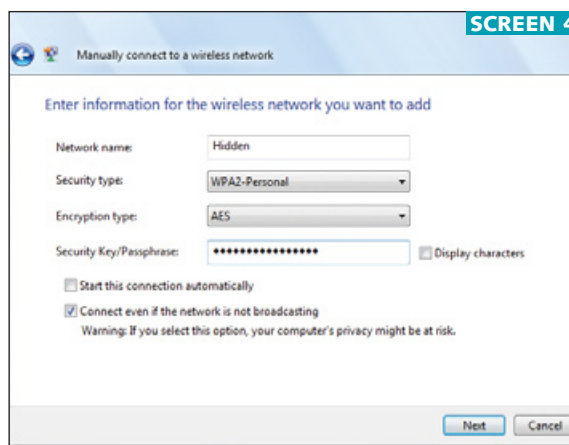
The Network and Sharing Center provides a one-stop shop for commonly used Vista networking tools

Vista is only able to map devices that support the Link Layer Topology Discovery (LLTD) protocol





SCREEN 3



SCREEN 4

Vista should detect non-broadcasting networks, but if it doesn't you can create a profile manually

type of network.

On a non-broadcasting wireless network, the access point or router is configured so it doesn't broadcast the wireless SSID – in effect, the network name or identifier. This is done to hide the wireless network from unauthorised users, although it's not foolproof and can cause problems for those wanting to connect legitimately – especially in Windows XP, where you're not allowed to choose a non-broadcasting wireless network as a preferred connection. Rather, the XP auto configuration service will attempt to connect to broadcasting access points before trying hidden networks.

In Vista, however, you can configure wireless networks as broadcast or non-broadcast and the PC will attempt to connect in the preferred order, regardless of whether the SSID is being broadcast or not.

According to the documentation you should also be able to see new non-broadcasting networks in the list of available networks, with the name Unnamed Network displayed alongside. In a lot of cases, however, non-broadcasting networks still won't be discovered and you'll need to configure the connection manually.

To do this open the Network and Sharing Center and click on 'Set up a connection or network task', then choose 'Manually connect to a wireless network'. You will then be prompted for the name of the network (the non-broadcast SSID), plus the type of security and key required to access it (see Screen 4). You'll also be presented with checkboxes to start the connection automatically whenever in range and to choose to connect even if the network isn't broadcasting.

Where several connection profiles are defined you can then put them in priority order from the Manage Wireless Networks task by moving the

With the LLTD Responder installed, XP PCs can also be included in Vista network maps

profiles up and down the list. Note also that in Vista it's possible to specify whether wireless profiles are available to everyone or only selected users of the PC.

Personally, non-broadcasting wireless networks are a bit of a pain and the extra work involved is not really worth it, especially as it's very easy to find out the SSID anyway. As such I normally recommend leaving SSID broadcasts on and using other security tools to protect a wireless LAN.

Network settings

When you create a new network connection in Vista, you're prompted to say whether it's a private (home or work) or a public connection. Vista will configure the Windows firewall, network discovery and other options to match. However, there could be times when you want to change the type of network, or perhaps rename, delete or merge your network locations – all of which is possible from

the Network and Sharing Center. Open the Network and Sharing Center and you'll see a link labelled Customize alongside each of the active connections. Click this to get to a dialogue box from which you can change the name and the location type. You can even change the display icon if you want.

From this dialogue you can also click the link marked Merge or Delete network locations to get rid of old or unwanted definitions. It's a facility that won't make the PC run any quicker but does let those of us with tidy minds sleep more soundly.

Note, however, that a small Catch-22 can arise here, as Vista only displays the Customize link alongside active connections. Unfortunately, it won't then let you merge or delete locations that are in use. The workaround to that (for wireless at least) is to open the tool while the connection is active, then disconnect to enable changes to be made. **PCW**

User Account Control

A lot of the networking setup and changes discussed here will be affected by the new User Account Control (UAC) technology built into Windows Vista. This much-debated new feature is a core security component, designed to limit the damage that can be done by viruses, trojans and other malware should they attack a Vista PC. To this end it's enabled by default in Vista and gives standard users extended rights to perform common management tasks which, under previous versions of Windows, would have required them to be system administrators with rights to just about everything.

Some tasks require elevated privileges, typically indicated by a small shield icon alongside the link or button in the associated

menu or dialogue box. When a standard user tries to perform one of these they will be asked for administrator credentials before being allowed to proceed – a bit like being asked to log on or 'su' to the root or superuser account in Linux before making a system change.

Even if logged on as an administrator, Vista UAC will still prompt for confirmation before allowing a task to execute with elevated privileges, resulting in lots of pop-ups for just about any change you try to make from the control panel or associated management tool. Some people find this tedious so you can, if you want, disable UAC. However, that's not really a good idea as it does serve a purpose. And once you have your PC configured, you rarely encounter UAC prompts in day-to-day use.