You can read the recommendations in the user guide, the technical guide or the installation guide for LINKSYS WRT1900ACS. You'll find the answers to all your questions on the LINKSYS WRT1900ACS in the user manual (information, specifications, safety advice, size, accessories, etc.). Detailed instructions for use are in the User's Guide.

User manual LINKSYS WRT1900ACS
User guide LINKSYS WRT1900ACS
Operating instructions LINKSYS WRT1900ACS
Instructions for use LINKSYS WRT1900ACS
Instruction manual LINKSYS WRT1900ACS

You're reading an excerpt. Click here to read official LINKSYS WRT1900ACS user guide

http://yourpdfguides.com/dref/5896603

Manual abstract:

A solid amber LED indicates the connection is down due to configuration issues. Amber blinking indicates that the connection is down due to hardware issues. 2. 4 GHz (White) The Wireless LED is solid white when one or more clients are connected to the 2. 4 GHz network. If the LED is blinking white, the router is sending or receiving data over the 2. 4 GHz network. 5 GHz (White) The Wireless LED is solid white when one or more clients are connected to the 5GHz network. If the LED is blinking white, the router is sending or receiving data over the 5 GHz network. Front View eSATA (White) When off, the USB/eSATA port is off or a USB device is connected.

The LED is solid white when an eSATA device is connected. A blinking white LED indicates activity through the eSATA port. USB 1 (White) When off, the USB /eSATA port is off or an eSATA device is connected. The LED is solid white when a USB device is connected. A blinking white LED indicates activity on the port.

USB2 Primary (White) When off, the USB 3. 0 port is off. The LED is solid white when a USB device is connected. A blinking white indicates activity on the port USB2 Secondary (White) When off, a USB 1. ETHERNET 1 thru 4 (Primary) (White) These numbered LEDs correspond with the numbered ports on the router's back panel.

If the white LED is solid, the router is connected to a device through that port. A flashing white LED indicates network activity over that port. ETHERNET Primary Indiators Front Panel USB 2 Primary Indiator USB 2 Secondary Indiator ETHERNET Secondary Indiators WRT 1900AC | Product Overview 1 ETHERNET 1 thru 4 (Secondary) (White)If the white LED is off, the router is successfully connected to a device through that port at 10/100 Mbps. A solid white LED indicates that the router is successfully connected to a device at 1000 Mbps. (White/Amber) The LED blinks slowly for two minutes during Wi-Fi Protected Setup. It will be solid white for five seconds to indicate a successful connection The LED blinks amber if the he Wi-Fi Protected Setup process fails. Make sure the client device supports Wi-Fi Protected Setup. Wait until the LED is off, and then try again. the router supports one session at a time. Wi-Fi Protected Setup button Press to easily configure wireless security on Wi-Fi Protected Setup-enabled network devices.

Ethernet Ports Connect Ethernet cables to these blue gigabit 10/100/1000) ports, and to wired devices on your network. Note: For best performance, use CAT5E or higher rated cables on the Ethernet ports. internet Port Connect an Ethernet cable to this yellow gigabit (10/100/1000) port , and to a broadband Internet cable/DSL or fiber modem. 4 x Adjustable External Antennas Note: For best performance, use CAT5E or higher rated cables on the Ethernet ports. uSB 3. 0 Port Connect and share a USB or eSATA drive on your network or on the Internet. uSB 2. 0/eSATA Combo Port Connect and share a USB or eSATA drive on your network or on the Internet. You can also connect a USB printer and share it across your network. Reset Button Press and hold for 10 seconds (until the power LED starts flashing) to reset the router to factory settings.

You can also restore the factory settings using Linksys Smart Wi-Fi on the Internet or mobile app. Power Port Connect the included AC power adapter. Power Button Press to turn on the router. 0/eSATA Port Back View Adjustable External Antennas This router ships with four adjustable external antennas that should be connected to the router before powering it on. To connect the antennas, twist the antenna connector clockwise onto the antenna port on the router.

Note: For best performance, position the side antennas vertically as shown in the picture. WRT 1900AC | Product Overview 2 Wall-Mounting Placement The router has wall-mount slots on the bottom of each foot for flexibility in mounting the router on the wall. The distance between the slots on the short side is 105 mm. The distance between the slots on the longer side is 211 mm. Two screws are needed to mount the router.

Mounting Instructions • Determine where you want to mount the router and which side you should use to mount it. Make sure that the wall you use is smooth, flat, dry, and sturdy. Make sure the location is within reach of an electrical outlet. ⬜ Before drilling holes, choose the template (short side or long side) that fits your installation. Drill the holes using the correct template. ⬜ Insert a screw into each hole and leave 8 mm of its head exposed. ⬜ Position the router so the wall-mount slots line up with the two screws. •. Place the wall-mount slots over the screws and slide the router down until the screws fit snugly into the wall-mount slots. wall-Mounting Template (Short Side) Print this page at 100% size.

Cut along the dotted line, and place on the wall to ensure precise spacing of holes. suggested Mounting Hardware 3 mm 105 mm 6-7 mm 1. 5-2 mm Note: Linksys is not responsible for damages incurred by unsecured wall-mounting hardware. wRT 1900AC | Product Overview 3 Wall-Mounting Template (Long Side) Print this page at 100% size. Cut along the dotted line, and place on the wall to ensure precise spacing of holes. 211 mm WRT 1900AC | Product Overview 4 Setting Up: Basics HOW TO CREATE A HOME NETWORK What is a network? A network is any group of devices that can communicate with each other. A home network can also include Internet access, which requires a router like this one. A typical home network may include multiple computers, a printer, a modem, and a router. A large home network may also have a switch, additional routers, access points, and many Internet-capable media devices such as TVs, game consoles, and web cameras. modem Connects a computer or a router to your ISP (Internet Service Provider).

Your ISP may have provided one. The modem is a device that connects to a phone jack or your cable TV outlet. Router Connects your wireless and wired network devices to each other and to the modem (and to your ISP). Switch Allows you to connect several wired network devices to your home network. your router has a built-in network switch (the Ethernet ports).

If you have more wired network devices than available Ethernet ports on your router, you will need an additional switch to consolidate the wired connections. How to set up a home network: Purchase the proper equipment. For a network that includes Internet access, you'll need: • Computers with an Ethernet port or wireless networking capabilities • A modem for connecting to your ISP (typically supplied by your ISP) • A router to connect your computers with each other and to the modem • Internet service to your home, provided by an ISP (Internet Service Provider) • Make sure that your modem is working. Your ISP can help you set up your modem and verify that it's working correctly. • Set up your router.

See "How to install your router" on page 6. ⬜ To connect a computer or other network device to the network, see "How to connect a computer to your network" on page 10 and "How to connect other devices" on page 11.

WHERE TO FIND MORE HELP In addition to this User Guide, you can find help at these locations: • Linksys. Com/support (documentation, downloads, FAQs, technical support, live chat, forums) • Linksys Smart Wi-Fi help (connect to Linksys Smart Wi-Fi, then click Help at the top of the screen) WRT 1900AC | Setting Up: Basics 5 HOW TO INSTALL YOUR ROUTER To Install Your Router: • If replacing an existing router, disconnect it. Power on your new router. ⬜ ⬜ onnect the Internet cable from your modem to the yellow INTERNET port on your C router. Wait until the power light on the front of the router is solid. ⬜ Connect to the secure wireless name shown in the Quick Start Guide that came with your router. (You can change the network name and password later.) If you need help connecting to the network, refer to your device documentation.

Note: You will not have Internet access until router setup is complete. ⬜ ⬜ pen a web browser and follow the instructions to complete setup. If instructions do O not appear in the web browser, type "linksyssmartwifi. com" in the address bar. ⬜ At the end of setup, follow the on-screen instructions to set up your Linksys Smart Wi-Fi account. Use Linksys Smart Wi-Fi configure your router from any computer with an Internet connection. Manage Your Router's Settings: • Change your router's name and password • Set up guest access • Configure parental controls • Connect devices to your network • Test your Internet connection speed Tip: Print this page, then record your router and account settings in the table below as a reference. Store your notes in a safe place. Setup also saves your setup information as a file to your computer desktop. Network Name (SSID) Network Password Router Password Guest Network Name Guest Network Password Note: As part of the router setup process, you will be sen setup software, but you can change it at any time.
You need the router password to change router settings when you don't have an Internet connection. When you do have an Internet connection, log into your Linksys Smart Wi-Fi account by following the directions under "How to connect to Linksys Smart Wi-Fi" on page 7. To change your router's local access password: • Log into Linksys Smart Wi-Fi. ⬜ Under Router Password, type the new password, then click OK. HOW TO CHANGE YOUR ROUTER'S TIME ZONE Your router's time zone should be set to your local time zone.
To set your router's time zone: • Log into Linksys Smart Wi-Fi. ⬜ Click the Basic tab, then select your time zone in the Time Zone drop-down list and click OK. WRT 1900AC | Setting Up: Basics 9 HOW TO TEST YOUR INTERNET CONNECTION SPEED Note: To run the speed test, you must be accessing the Internet by using the router you are testing. You cannot run the speed test remotely. Note: Internet connection speeds are determined by a variety of factors, including ISP account type, local and worldwide Internet traffic, and number of devices in your home that are sharing the Internet connection.
To test your Internet connection speed: • Log into Linksys Smart Wi-Fi. H OW TO CONNECT DEVICES TO YOUR NETWORK Y our Linksys router is the nerve center of your home network. Your router safely opens the Internet to your network, and all of your computers and network devices rely on your router to pass files, media, and network commands in an organized, error-free way. Whether connected wirelessly or with cables, each part of your network needs the router in order to work reliably with the other parts of your network. H ow to connect a computer to your network A t the computer you want to connect, enter your network's connection information into your wireless manager. A fter that computer connects to your network, log in to Linksys Smart Wi-Fi, then click Network Map to confirm that your router recognizes the new computer. You can use the Network Map to monitor all network-attached devices. H ow to connect a USB printer W hen you set up a wireless printer make sure that it supports the WPA/WPA2 wireless encryption standard. I f your wireless printer supports Wi-Fi Protected Setup, you should use Wi-Fi Protected Setup to connect the printer to your network. See "How to connect a network device using Wi-Fi Protected Setup" on page 16.

click Begin Test. The test measures your download and upload speeds. ⬜ Click Restart Test to run it again, and click Show History to display the results of past tests. WRT 1900AC | Setting Up: Basics 10 To connect a USB printer to your network through the router's USB port: • Log into Linksys Smart Wi-Fi. ⬜ Under Select the type of device to add to your network, click USB Printer. the Add a USB printer screen opens. ⬜ Follow the on-screen instructions for downloading and installing the VUSB (virtual USB) software for your computer. To connect a wireless printer to your network: Follow the printer's instructions to connect it to your network. Use the connection information available in Linksys Smart Wi-Fi or saved to your computer desktop. After that printer connects to your network, log into Linksys Smart Wi-Fi, then click Network Map to confirm that your router recognizes the new printer.
How to connect other devices Many other types of wireless network devices can connect to your home network, including: • Game consoles • Internet-capable TVs and media players • Digital music players • Smart phones Because of the wide variety of devices and methods of connecting, you must manually enter network information into the devices for a successful network connection. WRT 1900AC | Setting Up: Basics 11 Tip: For more instructions on connecting a game console to your network, see also: "How to optimize your router for gaming and voice" on page 31 "How to set up port forwarding" on page 39 "How to set up port range triggering for online gaming" on page 40 HOW TO MANUALLY CONNECT A NETWORK DEVICE To manually connect a device to your network: Follow the device's instructions to connect it to your network. Use the connection information available in Linksys Smart Wi-Fi or saved to your computer desktop. After the device connects to your network, log into Linksys Smart Wi-Fi, then click Network Map to confirm that your router recognizes the new device. H ⬜ OW TO CONNECT A NETWORK DEVICE USING Wi-Fi PROTECTED SETUP ™ To connect a device using Wi-Fi Protected Setup: • Plug in and turn on the network device.
• Under Wireless , click the Wi-Fi Protected Setup tab. ⬜ Use one of the following methods to complete the setup: • ⬜ f the device has a Wi-Fi Protected Setup button, press that button, then click the I Wi-Fi Protected Setup button in Linksys Smart Wi-Fi or press the button on the back of your router. ⬜ ⬜ f the device has a Wi-Fi Protected Setup PIN, type that number into the Device I PIN box in Linksys Smart Wi-Fi, then click Register.

f the device's own setup asks for the router's Wi-Fi Protected Setup PIN, enter the I number that appears under Router PIN in Linksys Smart Wi-Fi. Click the Wi-Fi icon to the right of the device.

HOW TO VIEW DEVICE DETAILS You can use Linksys Smart Wi-Fi to view any network device's network information. WRT 1900AC | Setting Up: Basics 12 HOW TO SET UP PARENTAL CONTROLS With your router, you can use parental controls to: • Set the times that Internet access is allowed. Block websites that you specify, or based on their content. Set the above restrictions for specific computers. tip: When someone tries to open a blocked website , a Linksys Smart Wi-Fi login page appears. To view the blocked content, you must log in to your Linksys Smart WiFi account and change the parental control restrictions. Tip: It's not necessary to set parental controls over each computer on your home network. You can set the controls on only those computers that children can access. To select a computer to apply parental controls to, click the name of the computer in the Restrict Internet access on list. To block Internet access on the selected computer(s), under Block Internet access: • Click Never to allow Internet access.

• Click Always to always block Internet access. Click Specific Times to set the times when Internet access is allowed. • Click Edit to change the Internet access schedule. You can click and drag to select or deselect a block of time. Type the web address (URL) of the website to block, then click OK. You can block up to 10 websites. Tip: It's easier to copy and paste a web address than it is to type it in. Copy the address from your browser's web address box, then paste it into an available box in the Block Specific Sites screen of Linksys Smart Wi-Fi. click OK to apply your changes. WRT 1900AC | Setting Up: Basics 13 To turn on parental controls, slide the Enable parental controls switch so that "ON" is displayed.

HOW TO CONFIGURE YOUR GUEST NETWORK You can use your router's guest network to provide your guests with access to the Internet, while restricting their access to other resources on your local network. To prevent unauthorized users from using your Internet access, your guest network requires that a password be entered for Internet access. the guest network is enabled by default. Your wireless network's guest network and password were set when you ran the router's setup software, but you can change them at any time. To set up guest access to your network: Log into Linksys Smart Wi-Fi. Your guest network, which was set up during your router installation, is displayed. To change the number of simultaneous guest network users you want to allow, click the drop-down box under Total guests allowed, then click the number that you want. Tip: To keep your guest network secure, click Change to change the guest password when the guest no longer needs access to the account. click OK to apply your changes. Tip: The first time your guest tries to access the Internet through a web browser, they will see the Guest access screen.

To continue, they must enter the password you provided in the Password field, then click LOGIN. To turn guest access on or off, toggle the Allow guest access switch. The guest network name is based on your 2. 4 GHz network name and is automatically generated. To change the guest network password, click in the box next to Guest network password, then type the new password. WRT 1900AC | Setting Up: Basics 14 HOW TO BACK UP YOUR ROUTER CONFIGURATION When you are done setting up your router, you should back up its settings so that you can restore them later if necessary. For instructions, see "How to back up and restore your router configuration" on page 42. CUSTOMIZING THE NETWORK MAP You can change the icon and name of each device on your network. HOW TO CUSTOMIZE LINKSYS SMART Wi-Fi You can customize your Linksys Smart Wi-Fi home page by adding or removing widgets. Widgets are miniature versions of menus that let you change basic settings or check the status of your network.

) • Open a menu, then select Show widget on the homepage in the upper-right corner. To remove a widget: • On the home page, click the x in the upper-right corner of the widget you want to remove. Click on Device Info in the pop-up window c. Click on Edit in the upper right corner d. Type in a new name 2. Click on Device Info in the pop-up window c. click on Change under the current icon d. Choose a new icon from the available options WRT 1900AC | Setting Up: Basics 15 Using an External Drive OVERVIEW You can attach most USB drives (including a thumb drive or a high-capacity external drive) to the USB port on your router. You can then use the drive as networked storage, as a media server (for media-enabled devices such as a networked TV), and as an FTP (File Transfer Protocol) server. You can also specify which users can access the content on the drive.

menus are subject to change. To view the status and settings of your attached drive: • Log into Linksys Smart Wi-Fi. The Status tab displays information such as the following: Drive capacity and use Secured folder access status Addresses for accessing shared folders, the FTP server, and media server. HOW TO ATTACH A USB DRIVE If a USB drive is already connected to the router, and you want to attach a different drive to that USB port, you should safely disconnect the old drive first. To safely remove a USB drive from the router: • Log into Linksys Smart Wi-Fi, then click External Storage under Apps. • In the Status tab , click Safely remove drive. Disconnect the old drive from the router. To attach a USB drive to the router: • Connect the USB drive to an available USB port on the back of your router. Your router will detect the drive. To update the External Storage screen, you may need to click Refresh. HOW TO USE SECURED FOLDER ACCESS Why would I need to use secured folder access? By default, when you connect a USB drive to your router, the entire contents of the drive are available for read and write access to anyone on your local network (no login credentials are required). However, you can also make the drive and its folders secure, so that only authorized users can access the drive's contents.) • Click External Storage under Apps, then click the Folder Access tab. Select the permissions to give the user. Read Only lets the user read (open) the file. Read & Write lets the user read, rename, overwrite, or delete the file. The user can also save new files to the folder. • Click Select Share. The Select Existing Share dialog box opens. If you already have the shared folder set up: • Select the check box next to each share you want to grant access to, then click OK.

If you need to set up the shared folder: • Click Create new share. The Create New Share dialog box opens.

Click the setting for Secure Folder Access to turn it on. • The Authorized users list appears. In the Authorized users list, type a Username and Password for each new user. Click the button next to the folder that you want to share. To view subfolders, click the icon next to the folder name. To return to a parent folder, click the icon at the top of the list. To select the entire drive, select Share entire storage device. Tips: Tip: Two accounts, Admin and Guest, are already set up and cannot be deleted.

The share name automatically changes to the name of the folder you selected. You cannot select more than one folder for each share. WRT 1900AC | Using an External Drive 17 • To use a different share name, type the name in the Share name field. • Click OK. Select the check box next to each share you want to grant access to, then click OK.

• Click Add User. In the Authorized users list, you can also: • Click Edit to change a user's credentials. Click Shares to change the shares that a user can access. • Click Delete to delete the user account. HOW TO SET UP YOUR ROUTER AS A MEDIA SERVER A media server lets you share media content across your network.

Your router can act as a media server if it has a USB drive attached and if you have UPnP AV (Audio and Video)-enabled or DLNA (Digital Living Network Alliance)-certified devices in your home. Examples of UPnP AV-enabled devices include digital media players, gaming consoles with a built-in media player, and digital picture frames. For example, if you have a digital media adapter that sends content to your entertainment system, and if your router's set up as a media server, then the digital media adapter can access your router's attached USB drive. You can specify which folders are used by the media server, add and delete folders, and specify how often the folders are scanned for new content. Note: The EA3500 does not support the media server feature. HOW TO ACCESS SHARED FOLDERS To access shared folders while on your network: • While in Linksys Smart Wi-Fi, click External Storage under Apps. In the Status tab, note the information under Folder Access. This is the address you will need to access the shared folders from a file manager. Enter the access address into your file manager. Tip: You can also usually locate the folder by browsing through your computer's file manager.

 Enter your user account name and password. the drive's contents (files and folders) appear in a window. Use the file manager to open, copy, or view the folder's contents. Tips: File managers display content in many ways, but you can usually use these common actions to navigate through folders: Click or double-click a folder name to open it. Click, double-click, or right-click a file to open, copy, or view it. Drag a file from another window and drop it into the shared folder's window to copy it to the shared folder. (To copy a file to the shared folder, your user account must have write access.) WRT 1900AC | Using an External Drive 18 • Toggle the switch for Enable Media Server to turn it on. • Click Add New Folder. The Add a new folder dialog box opens.

H OW TO CONNECT YOUR UPnP DEVICE TO THE MEDIA SERVER After you set up your router's media server, you need to connect an UPnPcompatible device (such as an UPnP-compatible game console or digital media player) to the network so that you can play the media server's content. To connect an UPnP device to your router's media server: • Connect your UPnP device to your home network with wired (Ethernet cable) or wireless networking. If you are connecting wirelessly, you need to know your network's name and password. See your device's documentation for help. On your UPnP device, change the media source to the media server name you specified on your router.

(See "How to set up your router as a media server" on page 18.) • See your UPnP device's documentation for help with playing media on the device. Click the button next to the folder that you want to share, then click OK. To view subfolders, click the icon next to the folder name. To return to a parent folder, click the icon at the top of the list.

Tips: The share name automatically changes to the name of the folder you selected. You cannot select more than one folder at a time. Click OK again to save changes. WRT 1900AC | Using an External Drive 19 HOW TO REMOTELY ACCESS STORAGE After you enable the router's FTP (File Transfer Protocol) server, you can access the attached drive's files from anywhere by using either a web browser or FTP software. To access the attached storage using a web browser: • Open a web browser. In the browser's address or URL field, type the address that was provided on the Status tab above, starting with ftp://. If you have DDNS (Dynamic Domain Name Service), you can use your router's domain name instead. • Enter your Username and password. This is the same Username and Password that were set up in the shared folders Authorized users list. Click a file to download it to your computer, or click and drag a file from your computer's file manager to the browser window to upload a file (only if you have read and write access).

To access the attached storage using FTP client software: • Run your FTP client software. Refer to the software's help to determine how to connect to an FTP site with the following information: • The address that was provided on the Status tab above, starting with ftp://. If you have DDNS (Dynamic Domain Name Service), you can use your router's domain name instead. The Username and Password that were set up in the shared folders Authorized users list. see "How to set up authorized users and shared folders" on page 17. The port and encoding specified during your FTP server setup (usually port 21, and UTF-8 encoding) • Refer to the software's help to determine how to download and upload files. Tips: • Toggle the switch for Enable FTP Server to turn it on. We recommend that you keep the default settings for FTP Port and Encoding, unless you are an advanced user and have reason to change them. This is the information you will need to access the attached storage remotely. FTP software and web browsers display FTP content in many ways, but you can usually use these common actions to navigate through FTP folders: Click a folder name to open it.

Drag a file from another window and drop it into the FTP window to upload it. (To upload a file, your user account must have write access.) WRT 1900AC | Using an External Drive 20 Setting Up: Advanced HOW TO MANUALLY SET UP YOUR ROUTER Although running your router's setup software is the easiest way to set up and maintain your router, advanced users may want to manually configure their router.

Be careful when changing settings using this method. To manually set up your router: • Plug in your router.
To connect to your router with a cable: • Connect an Ethernet cable to the computer and to an available numbered Ethernet (blue) port on the back of your router. ☐ Disconnect the cable from the router's Internet port. To connect to your router wirelessly: • Make sure that your computer's wireless networking is turned on. ☐ Connect to the secure wireless name shown in the Quick Start Guide that came with your router. (You can change the network name and password later.
) If you need help connecting to the network, refer to your device documentation. (This address will open your router's firmware when there is no Internet connection.) • Click I have read and accepted the License Terms for using this software, read the license agreement, then select the checkbox. • Select I want to skip Setup and configure my router manually , and click Next. ☐ If you have a Linksys Smart Wi-Fi account, enter your credentials. Create an account if you haven't already done so. ☐ After you finish changing settings, click Save and close the browser window. Tip: For descriptions of the settings, click Help at the top of the screen. • Next to Type of Internet Connection , click Edit. ☐ Select your ISP's Internet connection type from the drop-down list.

Complete the Optional Settings only if required by your ISP. Tip: For field descriptions, click Help at the top of the screen. hOW TO MANUALLY SET UP YOUR INTERNET CONNECTION Running Setup configures your router's Internet connection. However, for some ISPs (Internet Service Providers), especially those outside of the United States, you may need to manually configure your router's Internet connection. How to configure basic Internet connection settings: • Connect to your router and log in using the instructions under "How to manually set up your router" on this page. • Under Router Settings , click Connectivity. The Connectivity page will open to the Basic tab. • Click OK. WRT 1900AC | Setting Up: Advanced 21 IPv6 Internet connection settings IPv6 is a new IP protocol that uses simplified packet headers and requires IPSec. it also has improved support for mobile IP and computing devices. Note: To use your router's IPv6 Internet connection settings, IPv6 service from your ISP (Internet service provider) is required. For more information on this service, ask your ISP. To manually configure your router's IPv6 settings: • Use an Ethernet cable to connect your router to your computer. To enable this option, IPv6 - Automatic must be unselected. To let your router handle the 6rd Tunnel settings (such as prefixes and address masks), change the 6rd tunnel setting to Automatic.
select Manual to change these settings manually. ☐ Prefix — Enter the prefix address used for the tunnel provided by your ISP. ☐ Prefix Length — Enter the prefix length used for the tunnel provided by your ISP. ☐ Border Relay — Enter the border relay address used for the tunnel provided by your ISP. ☐ IPv4 mask length — Enter the IPv4 address mask length used for the tunnel provided by your ISP.
click OK. H ☐ OW TO ASSOCIATE A ROUTER WITH YOUR LINKSYS SMART Wi-Fi ACCOUNT To associate an additional router to your Linksys Smart Wi-Fi account: • Run Setup for the additional router. When Setup is complete, you will be prompted to create a new Linksys Smart Wi-Fi account. ☐ Instead of creating a new account, click Login at the top of the screen. You are prompted to enter your account username (e-mail address) and password. ☐ Enter your original Linksys Smart Wi-Fi account username and password, and click Log in. The router will be added to your Linksys Smart Wi-Fi account. ☐ To configure the new router, log in to Linksys Smart Wi-Fi, then select the router's SSID (network name) from the drop-down list at the top of the screen. HOW TO GET THE MOST OUT OF YOUR DUAL-BAND ROUTER The most common reason people purchase dual-band routers is to ensure available bandwidth for streaming high-definition video. Users also want to make sure that their video streams won't be interrupted by other wireless network traffic.

To get the most out of your dual-band router, you should upgrade your wireless clients and split your traffic. click Edit. You can now change the following settings: • IPv6 - Automatic — Select Enabled to use IPv6 for all network addressing. • DUID (device user ID) — Used by DHCP to identify network clients. Upgrade your wireless clients If you have network adapters that support only legacy wireless network standards such as 802. 11b, you should consider upgrading them with Wireless-N (802. 11b) devices can slow your entire wireless network. For the best performance, all of your wireless devices should support Wireless-N. You can then select Wireless-N Only as your Network Mode below. WRT 1900AC | Setting Up: Advanced 22 Note: If you select Wireless-N Only, you may need to temporarily change your network settings to Mixed to provide access to guests without Wireless-N networking.
Split your traffic The best way to improve your multimedia wireless performance is to split your wireless traffic between your router's bands (ranges of radio frequencies). Your router supports the 2. 4 GHz band and the 5 GHz band, and handles the two bands as two separate wireless networks to manage the traffic. The most common way to split wireless traffic is to use the 2. 4 GHz band for basic Internet tasks such as web browsing, email, and downloads, and use the 5 GHz band for streaming multimedia.
although the 2. 4 GHz band may be more crowded with wireless traffic from your neighbors, it's fine for basic Internet traffic that is not time-sensitive such as e-mail. Even though you are connected to your own wireless network, you are still sharing air time with nearby networks. The 5 GHz band is much less crowded than the 2. 4 GHz band , so it's ideal for streaming multimedia.
The 5 GHz band has more available channels, so it is more likely that you will have your own, interferencefree channel for your wireless network. By default, your dual-band router uses the same network name on both the 2. 4 GHz band and the 5 GHz band. The easiest way to segment your traffic is to rename one of your wireless networks. With a separate, descriptive name, it will be easy to connect to the right network. The Wireless page opens to the Wireless tab. Click Edit next to the network band you want to modify. Change any of the settings. • Enabled — Deselect to disable the network band. ☐ Network name (SSID) — You can provide a unique SSID for each band of your network.

The name must not exceed 32 characters. ☐ Password — You can provide a unique password for each band of your network. ☐ Network mode — Your choice depends upon the clients that will connect to your network.

If all of your devices are Wireless-N capable, you can select Wireless-N Only for either or both bands. on the 2. 4 GHz band, you can select from the following: • Mixed • Wireless-B/G/N Only • Wireless-B/G Only • Wireless-N Only • Wireless-G Only • Wireless-B Only WRT 1900AC | Setting Up: Advanced 23 On the 5 GHz band, you can select from the following: • Mixed (default), which accepts connections from 802. 11n only) • Wireless-A/N Only • Wiresless-A Only Security mode — You can set up different security options for the 2. 4 GHz and 5 GHz networks. If the security mode you select requires a passphrase, a Password field appears, and you must enter a password. You can select: • None (no security) • WEP • WPA Personal • WPA Enterprise • WPA2 Personal • WPA2 Enterprise • WPA2/WPA Mixed Personal • WPA2/WPA Mixed Enterprise Tip: Wireless-N networks should use the WPA2-Personal security mode for best performance.

On the 5 GHz band, you can select: • Auto (automatically selects from the options below) • 20 MHz Only • 40 MHz Only Channel—Choose the operating channel for each band. Your router will automatically select the channel with the least amount of interference if you leave the default Auto setting. We recommend keeping the default settings for both bands. If you set up your wireless network manually and have not enabled wireless security, your wireless network will be an open network that almost anyone nearby with a Wi-Fi-enabled device could access. If you choose not to use the built-in security features of your router, you can still control access to your wireless network using MAC filtering.

every network device has a unique , 12-digit MAC (Media Access Control) address. Using MAC filtering, you can allow only known MAC addresses, and therefore known devices, onto your network. You can also exclude specific MAC addresses, denying them access to your network. tip: MAC filtering is not strong security. The best way to secure your network is to use the router's WPA2 security setting.

Example: Because each MAC filtering configuration is unique, this simplified example shows how to set up MAC filtering to allow only one device access to the network. Tip: It is easier to select Allow to permit only known devices than to try to Deny (exclude) unknown devices. Channel width — We recommend that you keep the default (Auto) setting for each band. In Auto mode, the router and the network clients automatically switch to the 40 MHz mode if the following happens: Your wireless clients support the 40 MHz mode (sometimes called Bonded mode) in which two 20 MHz channels are bonded together for better performance. there is no adjacent interference. With more available channels and less chance of interference on the 5 GHz band, you have the option to force the 40 MHz mode. on the 2. 4 GHz band, you can select from the following: • Auto (20 MHz or 40 Mhz) • 20 MHz Only WRT 1900AC | Setting Up: Advanced 24 To set up MAC filtering to allow one device access to your network: • Log in to Linksys Smart Wi-Fi. HOW TO IMPROVE SECURITY USING THE BUILT-IN FIREWALL By default, the firewall settings in your router work well in most home environments. You don't need to make changes.

The SPI (Stateful Packet Inspection) firewall is enabled by default, and anonymous Internet requests and IDENT requests are filtered by default. All web filters are disabled, because enabling them may cause problems for sites that depend on ActiveX controls, Java, or cookies. If you decide to change your firewall settings, log in to Linksys Smart Wi-Fi. The Security page will open to the Firewall tab. ☐ Select Enabled next to MAC Filters, and select Allow access for ONLY the listed MAC addresses. • Click Add MAC Address. Enter the MAC address into the MAC Filter List and click Save. You can now change the following settings: Tip: For more descriptions of each setting, click Help at the top of the screen. Firewall: • SPI firewall protection — This helps protect your local network from Internet threats. this option is enabled by default.

On some router models, this setting is separated into IPv6 and IPv4 options so that each can be handled separately. Caution: To help protect your network, you should keep this option enabled. WRT 1900AC | Setting Up: Advanced 25 VPN Passthrough: • IPSec Passthrough — IPSec (Internet Protocol Security) is a suite of protocols used to implement secure exchange of packets at the IP layer. The VPN clients on the local network can establish an IPSec VPN tunnel through the router. this option is enabled by default.

☐ PPTP Passthrough — PPTP (Point-to-Point Tunneling Protocol) allows the PPP (Point-to-Point Protocol) to be tunneled through an IP network. The VPN clients on the local network can establish a PPTP VPN tunnel through the router. this option is enabled by default. ☐ L2TP Passthrough — L2TP (Layer 2 Tunneling Protocol) enables point-to-point sessions using the Internet on the Layer 2 level. The VPN clients on the local network can establish an L2TP VPN tunnel through the router.

☐ Filter multicast — Multicasting allows a single transmission to simultaneously reach specific recipients within your local network. Select this option to block multicasting. this option is disabled by default. ☐ Filter Internet NAT redirection — This filter prevents a local computer from using a URL or Internet IP address to access the local server. Select this option to enable the filter. this option is disabled by default. On some router models, this setting applies to IPv4 Internet only. ☐ Filter ident (Port 133) — This filter prevents port 133 from being scanned by devices from the Internet. The Security page opens to the Firewall tab. click Add IPv6 Firewall Setting.

You can now change the following fields: • Description — Enter a description of the application. • Protocol — Select TCP , UDP , or Both (default). ☐ IPv6 Address — Enter the IPv6 address of the computer that should receive the traffic. ☐ Allow — Select the range of port(s) used by incoming traffic. click Save. The list will update to show the new settings: • To change a saved setting, click Edit next to the setting. ☐ To delete a saved setting, click Remove next to the setting. CHANGING IPV6 FIREWALL SETTINGS On some router models, the IPv6 firewall lets you customize IPv6 port services for applications. When users send these types of requests to your network via the Internet, the router will allow those requests to the appropriate computers. Note: To use your router's IPv6 Internet connection settings, IPv6 service from your ISP (Internet service provider) is required.

For more information on this service, ask your ISP. WRT 1900AC | Setting Up: Advanced 26 HOW TO SET UP THE DHCP SERVER ON YOUR ROUTER Your router can be used as a DHCP (Dynamic Host Configuration Protocol) server to automatically assign an IP address to each computer or device on your network.

the DHCP server is enabled by default. If you already have a DHCP server on your network, or if you do not want to use your router as a DHCP server, you should disable this setting. To configure your router's DHCP server settings do the following: Log in to Linksys Smart Wi-Fi.

To disable the DHCP server, deselect the Enabled checkbox. Leave the Enabled checkbox selected to edit the following settings: • Start IP address • Maximum number of users • IP address range (not editable) • Client lease time • Static DNS values • WINS Click OK. click the Local Network tab , and click DHCP Reservations. The DHCP Reservations list opens, which lists attached network devices and current DHCP reservations. @@@@@@@@@@Tip: For field descriptions, click Help at the top of the screen.

@@@@@@@@@@@@Note the port number used for the device. @@@@ linksysnet. @@ linksysnet. @@T o set up DDNS: Sign up for DDNS service at either www. Note all of the information provided to you by the DDNS provider. @@ the DDNS screen opens. @@@@@@@@@@@@If you are installing this router for the first time, reset your modem before connecting the router to your modem. To reset your modem, disconnect power for about one minute, and reconnect power. To clone a MAC address from your computer, do the following: • Log into Linksys Smart Wi-Fi. ☐ Enter the 12-digit MAC address of your old router, then click OK.

WRT 1900AC | Setting Up: Advanced 29 H ☐ OW TO CONNECT TO YOUR CORPORATE OFFICE USING A VPN A VPN (Virtual Private Network) uses a public network such as the Internet to provide secure communications between a remote computer and another network. Corporations often provide VPN access to their networks to enable employees to work from remote offices or while traveling. Most corporate VPNs use the Internet to provide connectivity between remote employees and the corporate network. For a typical VPN, the corporation installs a VPN gateway on their corporate network. Employees authorized to work remotely connect to the VPN gateway through the Internet using VPN software and security methods provided by their employers. Security and authentication requirements ensure a secure connection and access by only authorized users. The default VPN settings in your router have been configured to pass through (allow) the most common types of VPN protocols. Usually, no changes are needed. To change your VPN passthrough settings, do the following: • Log into Linksys Smart Wi-Fi. The Security page opens to the Firewall tab.

Enable each setting that you want to change: • IPSec Passthrough — IPSec (Internet Protocol Security) is a suite of protocols used to implement secure exchange of packets at the IP layer. The VPN clients on the local network can establish an IPSec VPN tunnel through the router. this option is enabled by default. ☐ PPTP Passthrough — PPTP (Point-to-Point Tunneling Protocol) allows the PPP (Point-to-Point Protocol) to be tunneled through an IP network. The VPN clients on the local network can establish a PPTP VPN tunnel through the router.

this option is enabled by default. ☐ L2TP Passthrough — L2TP (Layer 2 Tunneling Protocol) enables point-to-point sessions using the Internet on the Layer 2 level. The VPN clients on the local network can establish an L2TP VPN tunnel through the router. WRT 1900AC | Setting Up: Advanced 30 HOW TO OPTIMIZE YOUR ROUTER FOR GAMING AND VOICE Your router can prioritize traffic between your network and the Internet. Performance for demanding, real-time applications, such as online gaming, VoIP calls, video streaming, and videoconferencing, can be improved by configuring media prioritization.

Prioritization settings are applied only to traffic that is uploaded to the Internet. The router cannot control the quality of the traffic after it reaches the Internet. Tip: For more information on optimizing your router for online gaming, see "Port Forwarding and Port Triggering" on page 40. ☐ Click and drag high-priority devices from the Normal Priority list to the High Priority list. ☐ To prioritize an application or game, select the name in the drop-down list, then click and drag the icon next to the name to the High Priority list. ☐ If the application name isn't listed, click Edit and add the name. Tip: If you want to add a new application or game, you need to know its port and protocol information (see the application or game's documentation for help). If you set the bandwidth lower than the actual bandwidth of your router, performance may be limited. • Set the maximum Upstream Bandwidth. ☐ To help manage traffic priority with devices that support WMM, turn on WMM Support.

☐ To have the router resend data if an error occurs, turn off No Acknowledgement. WMM improves quality for audio, video, and voice applications by prioritizing wireless traffic. This feature requires that the wireless client devices in your network also support WMM. If your VoIP service uses SIP, select the SIP checkbox under Application Layer Gateway. - OR If your VoIP service uses other NAT traversal solutions such as STUN (Session Traversal Utilities for NAT), TURN (Traversal Using Relay NAT), or ICE (Interactive Connectivity Establishment), deselect the SIP checkbox. Note: You may need to contact your VoIP service provider to determine the type of NAT traversal configuration they use. Caution: If you specify a maximum bandwidth that is too high, the router cannot apply priorities correctly, and prioritization problems may result. HOW TO ENABLE VOICE OVER IP ON YOUR NETWORK VoIP (Voice over Internet Protocol) is a technology for using the Internet as an interface for telephone communications. To use VoIP, you need to get an account with a VoIP service provider. The VoIP service provider typically provides you with a telephone adapter that connects to your network.

If you do not use your network to make phone calls, you don't need to change the default settings. The Application Layer Gateway SIP (Session Initiation Protocol) allows SIP packets, used by some VOIP service providers, to get through your router's firewall. To configure the router for VoIP, do the following: • Log in to Linksys Smart Wi-Fi. (See "How to connect to Linksys Smart Wi-Fi" on page 7.) • Under Router Settings, click Connectivity, then click the Administration tab.

WRT 1900AC | Setting Up: Advanced 32 HOW TO CONFIGURE UPnP UPnP (Universal Plug and Play) allows devices connected to a network to discover each other and automatically create working configurations.) • Under Router Settings, click Connectivity, then click the Administration tab. HOW TO USE A ROUTER AS AN ACCESS POINT If you have a large area to cover with your wireless signal, or if part of your home has weak signals due to interference, you can use this router to extend the range of your old router's wireless network. To set up your new router as an access point, do the following: • Use a network cable to connect this router's Internet port to the Ethernet or LAN port on the router that is connected to your modem.

) • Under Router Settings, click Connectivity, then click the Internet Settings tab.
 Click Obtain an IPv4 address automatically, then click OK. The new router's LAN IP address will be changed and obtained from the router that is connected to your modem. If you have a large area to cover with your wireless signal, or if part of your home has weak signals due to interference, you can use your old router to extend the range of your wireless network. This is a complex process, so this procedure assumes that you have some networking knowledge. Tip: • To use UPnP, select Enabled (default) next to UPnP. To allow changing router settings while using UPnP, select Allow Users to Configure. To prevent local network users from disabling your Internet connection through UPnP, deselect the Allow users to disable Internet access checkbox. • Click OK. Check the documentation for your old router. Some brands of routers include either a switch on the outside of the case or a software option to convert it to an access point.

If either of these options is available, follow your old router's instructions to convert it to an access point. You need to take note of your new router's settings, and apply some of those settings to the old router so it can work as an access point. To view your new router's settings, do the following: • Make sure that your new router is connected to the Internet. Take note of the Network name (SSID), Password, Security mode, and Channel. Under Router Settings, click Connectivity, then click the Local Network tab. Take note of the DHCP server's IP address range (192. WRT 1900AC | Setting Up: Advanced 33 To use your old router as an access point, do the following: • With your computer connected to your old router, log into its browser-based administration utility. Note: Save your changes after finishing each step below. To reconfigure the wireless network on your old router, do the following: • Open the wireless network setup page. Change the network name (SSID) to match the name of your new network.
Having the same network name and security settings enables you to seamlessly roam between your new router and your old router. Change the security mode to match the security mode on your new router. Change the password (sometimes called the pre-shared key) on your old router to match the password on your new router. • Change the wireless channel to a non-conflicting channel. Some manufacturers have an Auto function for channel selection that automatically selects a wireless channel that does not interfere with other nearby wireless networks.
if your old router supports an Auto function , select that. Otherwise, you may need to manually select the wireless operating channel on your old router. in the 2. 4 GHz wireless spectrum, there are only three non-overlapping channels: 1, 6, and 11. Pick a channel that does not overlap the operating channel of your new router.
For example, if your new router is operating on channel 11, configure your old router for either channel 1 or channel 6. Connect an Ethernet network cable to one of the LAN/Ethernet ports on your old router and an Ethernet port on your new router. Caution: Do not connect the cable to the Internet port on your old router. If you do, you may not be able to set up the router as an access point on the current network. Open the setup page for the local network (LAN). In the Router IP address field, enter an unused IP address for the LAN network of your new router. For example, if your new router has an IP address of 192. 1, you should choose an IP address on the 192. You can choose any address within the range of 192. You should exclude addresses in the range that will be used by the DHCP Server of your new router (192.

A safe choice might be 192. Take note of this address, because this will be the address that you will use to manage your old router in the future. In the Subnet Mask field, enter "255. 0" or, if available, select that subnet mask from a drop-down list. Disable the DHCP server on your old router. (Because your old router will be operating as an access point instead of a router, you don't want it to distribute IP addresses. There should be only one active DHCP server on your network, and that should be your new router.) WRT 1900AC | Setting Up: Advanced 34 H OW TO PUT YOUR NEW ROUTER BEHIND AN EXISTING ROUTER T here are several reasons you might want to use your new router "behind" another router: • You might be in an environment that shares the landlord's Internet connection with all tenants. In this case, you should put your own router behind the landlord's router in order to create your own private network and to isolate computers on your network from the rest of the building. You are sharing an office building Internet connection, and you want to control Internet access or the content viewed by your employees.
 You already have an existing network and you want to extend the network's range or add wireless capabilities to your network. You want to separate older, less secure network devices from the rest of the network. T O ADD YOUR ROUTER TO AN EXISTING ROUTER OR GATEWAY In most cases, you can easily add your router to an existing wireless network by running Linksys Smart Wi-Fi. If you are unable to set up the additional router using the instructions below, see "To share an Internet connection" on page 36 or "To extend your network" on page 37. To add your router to your existing wireless network, do the following: • Connect your router's Internet port to the LAN/Ethernet port on your existing (upstream) router or gateway.
 Connect to the secure wireless name shown in the Quick Start Guide that came with your router. (You can change the network name and password later during router setup.) If you need help connecting to the network, refer to your device documentation. Note: You will not have Internet access until router setup is complete. Open a web browser and follow the instructions to complete your router's setup.
If instructions do not appear in the web browser, enter linksyssmartwifi. Com in the browser's address bar. At the end of setup, follow the on-screen instructions to set up your Linksys Smart Wi-Fi account. Note: As part of the router setup process, you will be sent a verification email. From your home network, click the link in the email to associate your router with the Linksys Smart Wi-Fi account. Make sure that the link opens in a supported web browser, such as Internet Explorer 8 or higher, Firefox 8 or higher, Google Chrome 10 or higher, and Safari 5 (for Mac) or higher. WRT 1900AC | Setting Up: Advanced 35 TO SHARE AN INTERNET CONNECTION Note: This is a complex process, so this procedure assumes that you have some networking knowledge. Caution: Connect the upstream network to your router's yellow Internet port, not one of the blue Ethernet ports.

If you connect to an Ethernet port, you create IP addressing problems for the office network. To add another router to share an Internet connection, do the following: This topic covers cases one and two above • Determine the IP address range for your upstream (office or building) network.

▢ To determine the address range by using a Windows computer: • Connect your computer to your upstream network's router. ▢ Click Start, Run, type CMD, then click OK. The command prompt window appears. • Type "ipconfig ," then press Enter. Tip: Although you can determine your computer's IP address in many ways, this method is quick and relatively easy. • Take note of the IP address. In this example, the IP address is 192. ▢ To determine the address range by using a Mac computer: • Connect your computer to your upstream network's router. ▢ From the Dock, click System preferences, click Network, then click Ethernet in the window to the left. In this example, the IP address is 192.

▢ Example: The above examples show that upstream IP addresses are on the 192. The default address of your new Linksys router is 192. In setting up one router behind another, you must make sure that the local network on your new router is different than the network of your upstream router. In the above example, because the default local network on your Linksys router 192. 0 is on a different subnet than the office network's 192.

0, you will be able to place your Linksys router behind the other router. ▢ Connect an Ethernet network cable to a LAN/Ethernet port on your upstream network to the yellow Internet port on your router. Tips: An office network often has a wall plate with an Ethernet port that you can connect to. If you are doing this in a home environment (without wall ports), connect an Ethernet network cable between a LAN port on your upstream router and the Internet port on your Linksys router. Run your router's setup CD on each computer that you want to connect to the Linksys router.

Each computer needs either a wired or wireless connection to the Linksys router. For more information, see "How to connect a computer to your network" on page 10. The computers that are connected to the Linksys router are now on the same network, and are isolated from the upstream network. However, you will still have access to the Internet through the upstream router (by way of your Linksys router). Because two routers are between your computer and the Internet, Internet traffic undergoes two network address translations. This is sometimes referred to as Double NAT. Your computers can also use the built-in capabilities of your Linksys router, such as parental controls. If you need further control over the type of content your employees or family access, you can create an account with an Internet filtering site such as www. After you create an account with them, use their DNS in place of your ISP's DNS. WRT 1900AC | Setting Up: Advanced 36 To use their DNS: • Log into Linksys Smart Wi-Fi.

▢ Complete the Static DNS fields with the information provided by your content filtering provider. • Click OK. HOW TO EXPOSE A DEVICE TO THE INTERNET If you are operating a Web server, a mail server, or a Web camera, you may want to expose that device to the Internet so anybody can access it. Your router includes a DMZ (Demilitarized Zone) feature that forwards all inbound ports presented on the WAN interface, except those that are specifically forwarded, to an individual IP address or MAC address. This feature is normally not used, because it presents significant security risks to the device that you designate for the DMZ. The DMZ device is not protected by the built-in firewalls, Internet filters, or router Web filters, and is open to attacks from hackers. A much safer way of exposing devices to the Internet would be to use port forwarding. see "How to set up port forwarding" on page 39. To set up a device in the DMZ, do the following: • Configure your device with a static IP address. See your device's documentation for help with setting a static IP address or use DHCP reservation (see "How to set up the DHCP server on your router" on page 27).

) • Under Router Settings, click Security, then click the DMZ tab. tO EXTEND YOUR NETWORK This topic covers cases three and four above. Note: This is a complex process, so this procedure assumes that you have some networking knowledge. To extend your network or add wireless capabilities, do the following: • If you want to extend your network, you may also follow the instructions above. One example of this might be to provide a separate wireless network for your children to keep their wireless network traffic separate from your wireless network.

You might also want to isolate one network from another network so that network shares aren't visible across networks. In this case, use an Ethernet cable to connect the Internet port of the downstream router to one of the LAN ports of the upstream router. Make sure that the local network subnets on the two routers are different. - OR • You can extend your network by turning the downstream router into an access point. (See "How to use a router as an access point" on page 34.

) When you use a router as an access point, computers connected to the access point are on the same IP subnet as all other devices connected to the router. File, printer, and media sharing is much easier if all devices are on the same subnet. ▢ Click the setting for DMZ to turn it on. WRT 1900AC | Setting Up: Advanced 37 • In the Source IP Address section, select Any IP Address to allow access to your DMZ device from the entire Internet, or select the alternate button and enter a range of allowed source addresses. ▢ In the Destination IP Address section, enter the last three digits of the IP address of the device that will be in the DMZ. The rest of the IP address is already completed. - OR If you want to specify the 12-digit MAC address of the device instead of setting up a DHCP address reservation, you can replace Step 6 with the following steps: • In the Destination IP Address section, select MAC Address, then click View DHCP Client Table. the DHCP Client Table screen opens. ▢ Click Select next to the device that you want to place in the DMZ, then click Close. The corresponding MAC address is copied into the MAC Address field.

• Click OK. WRT 1900AC | Setting Up: Advanced 38 Port Forwarding and Port Triggering HOW TO SET UP PORT FORWARDING Why would I use port forwarding? Port forwarding is a feature that forwards inbound traffic from the Internet on a specific port or ports to a specific device or port on your local network. You can set up port forwarding for the following: • A single port (see "How to set up port forwarding for a single port" below) • Multiple ports (see "How to set up port forwarding for multiple ports" on page 39) • A range of ports (see "How to set up port forwarding for a range of ports" on page 40) HOW TO SET UP PORT FORWARDING FOR MULTIPLE PORTS Some applications require forwarding of multiple ports.