16.3.1 Lab: Configure Wireless Security

Introduction

Print and complete this lab.

In this lab, you will configure and test the wireless settings on the Linksys WRT300N.

Recommended Equipment

- Two computers with Windows XP or Windows Vista
- An Ethernet NIC installed in computer 1
- A Wireless NIC installed in computer 2
- Linksys WRT300N Wireless Router
- Ethernet patch cable

Step 1

Ask the instructor for the following information that is used during the lab.

Default Login Information: User Name (if any) _____

Password _____

Basic Wireless Settings: Network Name (SSID)

Important: Only use configurations assigned by the instructor.

Note: use computer 1 for all lab instructions unless stated.

Step 2

Connect computer 1 to an **Ethernet** ports on the wireless router with an Ethernet patch cable.

Plug in the power of the wireless router. Boot the computer and log in as an administrator.

Step 3

Open the command prompt.

Type ipconfig.

What is the IP address for the computer?

What is the default gateway for the computer?

Step 4

Open Internet Explorer and connect to the wireless router.

Type "admin" in the "Password:" field.

The Setup screen appears. Click Wireless tab.

LINKSYS® A Division of Cisco Systems, Inc.				Firmware	Version : v0.93.9
			Wireless-N Bro	WRT300N	
Wireless	Setup Wireless	Security Access Restrictions	Applications & Gaming	Administration	Status
	Basic Wireless Settings	Wireless Security Wirel	ess MAC Filter	Advanced Wireless	Settings
Basic Wireless Settings	Network Mode : Network Name (SSID) : Radio Band : Wide Channel : Standard Channel : SSID Broadcast :	Mixed cisco1 Wide - 40MHz Channel 3 1 - 2.412GHZ 6 Enabled Disabled		<u>Help</u>	Cisco Systems

Step 5

Click Wireless Security tab, then for Security Mode select WPA2 Personal.

LINKSYS® A Division of Cisco Systems, Inc.								Firmwar	e Version: v0.93.9
						Wireless	-N Br	roadband Router	WRT300N
Wireless	Setup	Wireless	Security	Acces Restricti	s ons	Application Gaming	15 &	Administration	Status
	Basic Wireles	s Settings	Wireless Se	curity	Wirele	ss MAC Filter	1	Advanced Wireless	Settings
Wireless Security									
	Security Mod	de: Disable WEP WPA Pe WPA 2 P WPA En WPA 2 P	d versonal					<u>Help</u>	
		RADIUS Disabled	d Sa	ave Settings	Ca	ancel Change	s		CISCO SYSTEMS .utilluutillu

Set the following settings: Encryption – AES Pre-shared Key – c!scol&b1361 Key Renewal – 3600

Click Save Settings > Continue.

LINKSYS [®] A Division of Cisco Systems, Inc.						Firmware	e Version: v0.93.9
					Wireless-N B	roadband Router	WRT300N
Wireless	Setup Wire	eless	Security	Access Restrictions	Applications & Gaming	Administration	Status
_	Basic Wireless Set	tings	Wireless Secu	rity Wire	less MAC Filter	Advanced Wireless	Settings
Wireless Security	Security Mode: Encryption: Pre-shared Key: Key Renewat:	WPA2	Personal Rb1361 seconds			<u>Help</u>	Cisco Systems
			Save	Settings	Cancel Changes		Cisco Syste Willigger

Keep Internet Explorer open to the Linksys router.

Step 6

Log in to computer 2, the wireless computer, as the administrator.

Connect to the wireless network. If asked for a security key or passphase enter: c!scol&b1361

Open the command prompt.

Type ipconfig /all.

What is the physical address of the wireless NIC?

Type **ping IPaddress**. Where IPaddress is the IP address of computer 1.

Was the ping successful?

Keep the command prompt window open.

Step 7

From computer 1, make sure Internet Explorer is active.

Under the Wireless tab click Wireless MAC Filter.

LINKSYS [®] A Division of Cisco Systems, Inc.						Firmware	Version : v0.93.9
					Wireless-N Bro	adband Router	WRT300N
Wireless	Setup	Wireless	Security	Access Restrictions	Applications & Gaming	Administration	Status
	Basic W	/ireless Settings	Wireless	Security Wi	reless MAC Filter	Advanced Wireless	Settings
Wireless MAC Filter Access Restriction	 Enal Prev 	oled Disablec vent PCs listed below	I w from accessi	ng the wireless netw	vork.	<u>Help</u>	
MAC Address Filter List	O Perr	nit PCs listed below	to access the	wireless network.			
	MAC 01: MAC 02: MAC 03:	00:00:00:00:00:00 00:00:00:00:00:00 00:00:	MAC 26: MAC 27: MAC 28:	00:00:00:00:00:00 00:00:00:00:00:00 00:00:			

Select Enabled > Prevent > click Wireless Client List button.

LINKSYS® A Division of Cisco Systems, Inc.		Firmware Version : v0.93.9
	Wireles	ss-N Broadband Router WRT300N
Wireless	Setup Wireless Security Access Applicati Restrictions Gami	ions & Administration Status
	Basic Wireless Settings Wireless Security Wireless MAC Filte	er Advanced Wireless Settings
Wireless MAC Filter		
	Enabled O Disabled	Help
Access Restriction	 Prevent PCs listed below from accessing the wireless network. Permit PCs listed below to access the wireless network. 	
MAC Address Filter List	Wireless Client List NAC 01: 00:00:00:00:00:00 MAC 26: 00:00:00:00:00:00 MAC 02: 00:00:00:00:00 MAC 27: 00:00:00:00:00 MAC 27: MAC 03: 00:00:00:00:00 MAC 28: 00:00:00:00:00 MAC 28: 00:00:00:00:00:00	

Step 8

Select Save to MAC Address Filter List check box for computer 2.

A Division of Cisco Systems, In	.					
Wireless Client List Sort By	IP Address	*				
	8					
	Client Name	Interface	IP Address	MAC Address	Status	Save to MAC Address Filter List
	John-Ultimate	Wireless	192.168.1.101	00:0E:E8:D1:39:98	Connected	
	Add	\mathbb{R}^{-}	Refresh	Close		
Click Add.						

The Wireless MAC Filter window opens.

Wireless Wireless-N Broadband Wireless Setup Wireless Security Access Restrictions Applications & Administ Gaming Basic Wireless Setup Wireless Settings Wireless Security Advance Wireless MAC Filter Advance Advance Wireless MAC Filter Advance Wireless Machine Hele	Firmware Version : v0.93.9 Router WRT300N
Wireless Setup Wireless Security Access Restrictions Applications & Admini- Gaming Basic Wireless Settings Vireless Security Wireless MAC Filter Advance Wireless MAC Filter Object Hele	Router WRT300N
Wireless Setup Wireless Security Access Restrictions Applications & Gaming Admini- Advance Basic Wireless Settings Wireless Security Wireless MAC Filter Advance Wireless MAC Filter Object Hele	na-management of the second second second
Basic Wireless Settings Wireless Security Wireless MAC Filter Advanc	stration Status
Wireless MAC Filter	ed Wireless Settings
Enabled Disabled	
Enabled	
	<u></u>
Prevent PCs listed below from accession the wireless network	
Access Restriction	
Wireless Client List	
MAC 01: 00:0E:E8:D1:39:98 MAC 26: 00:00:00:00:00	
MAC Address Filter List MAC 02: 00:00:00:00:00 MAC 27: 00:00:00:00:00	
MAC 03: 00:00:00:00:00 MAC 28: 00:00:00:00	
MAC 04: 00:00:00:00:00 MAC 29: 00:00:00:00	
MAC 05: 00:00:00:00:00 MAC 30: 00:00:00:00	
MAC 06: 00:00:00:00:00 MAC 31: 00:00:00:00	
MAC 07: 00:00:00:00:00 MAC 32: 00:00:00:00	
MAC 08: 00:00:00:00:00 MAC 33: 00:00:00:00	
MAC 09: 00:00:00:00:00 MAC 34: 00:00:00:00	
MAC 10: 00:00:00:00:00 MAC 35: 00:00:00:00	
MAC 11: 00:00:00:00:00 MAC 36: 00:00:00:00	
MAC 12: 00:00:00:00:00 MAC 37: 00:00:00:00	
MAC 13: 00:00:00:00:00 MAC 38: 00:00:00:00	
MAC 14: 00:00:00:00:00 MAC 39: 00:00:00:00	
MAC 15: 00:00:00:00:00 MAC 40: 00:00:00:00:00	
MAC 16: 00:00:00:00:00 MAC 41: 00:00:00:00:00	
MAC 17: 00:00:00:00:00 MAC 42: 00:00:00:00	
MAC 18: 00:00:00:00:00 MAC 43: 00:00:00:00:00	
MAC 19: 00:00:00:00:00 MAC 44: 00:00:00:00	
MAC 20: 00:00:00:00:00 MAC 45: 00:00:00:00:00	
MAC 21: 00:00:00:00:00 MAC 46: 00:00:00:00:00	
MAC 22: 00:00:00:00:00 MAC 47: 00:00:00:00:00	
MAC 23: 00:00:00:00:00 MAC 48: 00:00:00:00:00	
MAC 24: 00:00:00:00:00 MAC 49: 00:00:00:00:00	
MAC 25: 00:00:00:00:00 MAC 50: 00:00:00:00	
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Click Save Settings > Continue.

Step 9

From computer 2: In the command prompt window type **ping IPaddress**. Where IPaddress is the IP address of computer 1.

Was the ping successful?

Step 10

From computer 1, click the browser so it is activated.

Click Administration on the main tab bar.

LINKSYS [®] A Division of Cisco Systems, Inc.			Firmware Version : v0.93.9
		Wireless-N Br	oadband Router WRT300N
Administration	Setup Wireless	Access Applications & Security Restrictions Gaming	Administration Status
	Management Log	Diagnostics Factory Defaults Firmw	are Upgrade
Management			
Router Access	Router Password :	••••••	Help
	Re-enter to confirm :		
Web Access	Web Utility Access :	HTTP HTTPS	
	Web Utility Access via Wireless :	Inabled O Disabled	
Remote Access	Remote Management:	O Enabled 💿 Disabled	
	Web Utility Access :	• HTTP HTTPS	
	Remote Upgrade :	O Enabled 💿 Disabled	
	Allowed Remote IP Address	Any IP Address	
		0 . 0 . 0 . 0 to 0	
	Remote Management Port :	0000	
Upnp	Upnp :		
	Allow Users to Configure :	Enabled O Disabled	
	Allow Users to Disable Internet Access :	O Enabled 💿 Disabled	
Backup and Restore	Backup Configurations	Restore Configurations	
			CISCO SYSTEMS
		Save Settings Cancel Changes	

Highlight the Router Password, type **lab1631**. Type the same password in Re-enter to confirm.

Click **Cancel Changes**. Do not save the new password.

Step 11

Click Security on the main tab bar.

LINKSYS Wireless-N Broadband Router WRT300N Security Applications & Access Restrictio Administration Status Setup Wireless Security Gaming Firewall SPI Firewall Protection : 💽 Enabled 🔘 Disabled Help... Internet Filter Filter Anonymous Internet Requests Filter Multicast Filter Internet NAT Redirection Filter IDENT (Port 113) Web Filter Proxy Java ActiveX Cookies **CISCO SYSTEMS** ահուսին Cancel Changes Save Settings

By default SPI Firewall Protection is Enabled.

What Internet Filters are activated?

What Web Filters are activated?

Step 12

Click **Applications & Gaming** on the main tab bar.

Click Single Port Forwarding.

LINKSYS [®] A Division of Cisco Systems, Inc.									
Applications 9						Wireless-N Bro	adband R	outer	WRT300N
Gaming	Setup	Wireless	Security	Acces Restricti	s	Applications & Gaming	Administra	tion	Status
	Single Port For	warding P	ort Range Fo	rwarding	Port I	Range Triggering	DMZ	QoS	
Single Port Forwarding		ů							
Application Name	Externet P	ort Internet Port	Protocol	To IP Ac	Idress	Enabled	Help		
None 💌				192.168.1	. 0				
None 💌				192.168.1	. 0				
None 💌				192.168.1	. 0				
None 💌				192.168.1	. 0				
None 💌				192.168.1	. 0				
	0	0	Both 💌	192.168.1	. 0				
	0	0	Both 🔽	192.168.1	. 0				
	0	0	Both 💌	192.168.1	. 0				
	0	0	Both 💌	192.168.1	. 0				
	0	0	Both 💌	192.168.1	. 0				
	0	0	Both 💌	192.168.1	. 0				
	0	0	Both 💌	192.168.1	. 0				
	0	0	Both 💌	192.168.1	. 0				
	0	0	Both 💌	192.168.1	. 0				
	0	0	Both 💌	192.168.1	. 0				
									ISCO SYSTEMS
			Sa	ve Settinas	Ca	ncel Changes			ուլիստուլիստ



LINKSYS [®] A Division of Cisco Systems, Inc.						Firmware	Version : v0.93.9
Applications 9					Wireless-N Br	oadband Router	WRT300N
Gaming	Setup Wireless		Security	Access Restrictions	Applications & Gaming	Administration	Status
	Single Port For	warding	Port Range Fo	rwarding Por	t Range Triggering	DMZ QoS	
Single Port Forwarding							
Application Name	Externet Po	ort Internet Port	Protocol	To IP Address	s Enabled	Help	
None 💌				192.168.1.0			
None FTP				192.168.1.0			
Telnet K				192.168.1.0			
DNS				192.168.1.0			
Finger				192.168.1.0			
POP3	0	0	Both 💌	192.168.1.0			
NNTP SNMP	0	0	Both 💌	192.168.1.0			
	0	0	Both 💌	192.168.1.0			
	0	0	Both 🔽	192.168.1.0			
	0	0	Both 💌	192.168.1.0			
	0	0	Both 💌	192.168.1.0			
	0	0	Both 💌	192.168.1.0			
	0	0	Both 💌	192.168.1.0			
	0	0	Both 💌	192.168.1.0			
	0	0	Both 💌	192.168.1.0			
							CISCO SYSTEMS
			Sa	ve Settings C	ancel Changes		األىاألي

Type the last octet of the IP address for the computer and then click **Enabled** checkbox.

						Wireless-N Br	oadband Rout	er WRT300
pplications & Gaming	Setup	Wireless	Security	Access Restrictio	s ons	Applications & Gaming	Administration	n Status
	Single Port For	warding F	Port Range Fo	rwarding	Port	Range Triggering	DMZ	QoS
Single Port Forwarding								
Application Name	Externet P	ort Internet Port	Protocol	To IP Ad	dress	Enabled	Help	
FTP 💌				192.168.1.	102	V		
None 💌			22	192.168.1.	0			
None 💌				192.168.1.	0			
None 💌				192.168.1.	0			
None 💌			·	192.168.1.	0			
	0	0	Both 💌	192.168.1.	0			
	0	0	Both 💌	192.168.1.	0			
	0	0	Both 💌	192.168.1.	0			
	0	0	Both 💌	192.168.1.	0			
	0	0	Both 💌	192.168.1.	0			
	0	0	Both 💌	192.168.1.	0			
	0	0	Both 💌	192.168.1.	0			
	0	0	Both 💌	192.168.1.	0			
	0	0	Both 💌	192.168.1.	0			
	0	0	Both 💌	192.168.1.	0			

Click Cancel Changes. Do not save the new setting.

Step 13

Click Port Range Triggering.

LINKSYS A Division of Cisco Systems, Inc.								Firmware	Version : v0.93.9
Applications 8		oadband Router	WRT300N						
Gaming	Setup	Wireless	Sec	urity	Acces Restricti	ss ions	Applications & Gaming	Administration	Status
	Single Port F	orwarding	Port F	Range Forwa	rding	Port I	Range Triggering	DMZ QoS	
Port Range Triggering							.,,		
	Applic	ation Name	Trigg	ered Range	Forwa	rded Rai	nge Enabled	<u>Help</u>	
			0	to 0	0	to 0			
			0	to 0	0	to 0			
			0	to 0	0	to 0			
			0	to 0	0	to 0			
			0	to 0	0	to 0			
			0	to 0	0	to 0			
			0	to 0	0	to 0			
			0	to 0	0	to 0			
			0	to 0	0	to 0			
			0	to 0	0	to 0			
									CISCO SYSTEMS
				Save S	Settings	Ca	ncel Changes		ավիտուսիրոշ

To open an otherwise blocked port, type in the application name **IRC**. Then type the Triggered Range **6660 to 7000**, Forwarded Range **113 to 113** and then click **Enabled** checkbox.

LINKSYS° A Division of Clicco Systems, Inc. Firmware Version : v0.93.0						
Applications & Gaming				Wireless-N Bro	oadband Router	WRT300N
	Setup Wireless	Security	Access Restrictions	Applications & Gaming	Administration	Status
	Single Port Forwarding	Port Range Forwa	arding Port	Range Triggering	DMZ QoS	
Port Range Triggering						
	Application Name	Triggered Range	Forwarded Ra	nge Enabled	Help	
	IRC	6660 to 7000	113 to 113	3		
		0 to 0	0 to 0			
		0 to 0	0 to 0			
		0 to 0	0 to 0			
		0 to 0	0 to 0			
		0 to 0	0 to 0			
		0 to 0	0 to 0			
		0 to 0	0 to 0			
		0 to 0	0 to 0			
		0 to 0	0 to 0			
						CISCO SYSTEMS
		Save	Settings Ca	incel Changes 📐		ավիրունիրութ

Click Cancel Changes. Do not save the new setting.

Step 14

From computer 1, click **Wireless** tab.

Click Wireless MAC Filter > Disable.

Click Save Settings > Continue.