

Connecting to the USR5453 Professional Access Point using the built in Radius server.

The intention of this document is to understand how to connect to the USR5453 using the built in radius server and 802.1x. It will cover how to configure the server on the access point, how to establish a connection using the MAXg client, Windows XP Sp 2 Wireless and the Intel PROSet Wireless client.

Why use a radius server (Remote authentication dial-in user service)?

The use of a radius server enhances security on a wireless network by the use of a shared secret. This offers increased security over WEP as the secret is never broadcast over the air so if anybody is 'snooping' your network, no security parameters can be retrieved. In this instance, the client supplies the authentication details and does rely on the access point. The USR5453 has a Radius Server built in, but it can also allow the client to connect to the Microsoft Windows ISA Radius server. This will enable the access point to form a secure tunnel for data transmission.

Configuring the USR5453 Professional Access Point.

BASIC SETTINGS	Manage use	r accoun	ts	
CLUSTER				
Access Points				
User Management	^o User Accounts.			
Sessions	To edit a user account, clic	k a user name.		
Channel Management	To enable or disable a user, click the "Enable" or "Disable" button. Likewise, to remove a user, click the			
Wireless Neighborhood	"remove" button. Ensure th	nat you have selec	ted at least one	user prior to any of these actions.
STATUS	Note: These user accounts RADIUS" and the Built-In a	apply only when authentication serv	the security moc er is chosen. Se	le is set to "IEEE 802.1x" or "WPA with e the Help panel for more information.
Interfaces				
Events	Edit User Name	Real Name	Status	
Transmit / Receive Statistics	[Edit] james	james	enabled	
Client Associations	[] [Edic] [pearce	Jpearce	enabled	
Neighboring Access Points	Selected users: Ena	ble Disable	Remove	
ADVANCED	[backup or restore the use	er database]		
Ethernet (Wired) Settings				
Wireless Settings	Add a usar			
Security	Add a user			
Guest Login	To add a user, fill in the fie	lds below and clic	k "add account".	
Virtual Wireless Networks				-
Radio	User Name	Jpearce		
MAC Filtering	Real Name	James	Pearce	
Load Balancing	Password	•••••		
Quality of Service	Password (again for	safety) •••••		J
Wireless Distribution System		Cance	Add Acco	unt
Time Protocol				

Log into the management console of the 5453 and locate the 'User Management Tab'.

Here you will need to enter the users 'Active Directory' or 'Windows Log On' details. If the client is not on a domain, enter the local user name and password which is supplied when you log onto Windows. Again, if you log into Windows without using a user name and password, please create an account in control panel\users and put these details into the 5453.

Click 'Add Account' when you have entered all of the details.

Now expand the Advanced tab and click Security.

BASIC SETTINGS	Modify security settings that apply to the Internal Network
CLUSTER	
Access Points	
User Management	Broadcast SSID 💿 Allow 🔘 Prohibit
Sessions	Station Isolation 💿 Off 🔘 On
Channel Management	
Wireless Neighborhood	Security Mode IEEE 802.1x
STATUS	
Interfaces	Authentication Server Built-in 💌
Events	Radius IP 127 . 0 . 0 . 1
Transmit / Receive Statistics	Radius Key
Client Associations	
Neighboring Access Points	Enable radius accounting
ADVANCED	
Ethomat (Winad) Cattings	
Wireless Settings	
wireless Settings	
Security	

In the Security Mode section, select 'IEEE 802.1x' and 'Authentication Server' 'Built In' from the drop down box. Finally, click the 'Update' button.

We are now ready to configure the Wireless Client (US Robotics MAXg and Intel Centrino)

If you wish to connect with Windows XP built in wireless client or Intel PROSet Wireless client, please skip this next section.

Configuring the US Robotics MAXg wireless client.

After you have installed the MAXg client (should this be the client of your choice, if not please skip to the appropriate section), open the MAXg utility.

U.S. Robotics MAXg Configuration Ut	tility 🔀
Wireless Networks Link Status Statistics Sit	e Monitor Information
Let this tool manage your wireless settings.	
Available networks To connect to an available network, click Confi	igure.
LUSR5353 Professional AP	Configure
	Refresh
PUSR5353 Professional AP	Move up
	Move down
	Import
	Export
Add Remove	Properties
Show wireless icon in systray.	Advanced
OK Cancel	Apply Help

Locate the USR5453 by identifying the SSID that you have assigned which in this instance is 'USR5453 Professional AP', highlight it and click configure.

On the configuration screen, select '802.1X' from the drop down menu.

ileless Network Tropentes	Authentication
Network name (SSID):	USR5353 Professional AP
Wireless network key	
This network requires a key fo	or the following:
Network Authentication:	Open 🗸
Data Encryption:	Open Shared 802.1X
Network key:	WPA WPA-PSK
Confirm key:	
Key index (advanced):	1
This is a computer to com	puter (ad boc) petwork : wireless
This is a computer-to-comp access points are not user Authenticate Prior to Wind	puter (ad hoc) network; wireless d

Should you wish to 'Authenticate Prior to Windows Login', put a check in the box. This will allow windows to connect to the radius server at the log in prompt and connect to a domain controller. This is useful when connecting to a windows ISA radius server.

When done, select the 'Authentication' tab at the top.

	ies
ireless Network Properties	Authentication
AP Method	
TTLS/PEAP	TTLS
I unnelled Authentication Pro	ICCOI PEAP
EAP-FAST	FAST
Authority server	Unknown
Username and Password	
Prompt for Username and	Password
Use Windows Username	and Password
Include Windows Dom	nain
Domain\Username:	
	47.1047
Password:	
Confirm Password	
Committe doomord.	
Certificate	
Certificate	
Certificate Logon/Identity:	
Certificate Logon/Identity:	<no certificate="" selected=""></no>
Certificate Logon/Identity:	<no certificate="" selected=""> Select View</no>
Certificate Logon/Identity:	<no certificate="" selected=""> Select View</no>
Certificate Logon/Identity:	<no certificate="" selected=""> Select View te - Any Trusted CA -</no>
Certificate Logon/Identity: Validate server certificat Issuer: Allow Intermediate certifi	<no certificate="" selected=""> Select View ee - Any Trusted CA -</no>
Certificate Logon/Identity: Validate server certificat Issuer: Allow Intermediate certifi Server name:	<no certificate="" selected=""> Select View ee - Any Trusted CA -</no>
Certificate Logon/Identity: Validate server certificat Issuer: Allow Intermediate certifi Server name:	<no certificate="" selected=""> Select View ee -Any Trusted CA -</no>
Certificate Logon/Identity: Validate server certificat Issuer: Allow Intermediate certifi Server name: Server name must match	Ke Any Trusted CA - Icates h exactly
Certificate Logon/Identity: Validate server certificat Issuer: Allow Intermediate certifi Server name: Server name must match Domain name must end	Ko certificate selected> Select View • Any Trusted CA - • Icates • h exactly in specified name
Certificate Logon/Identity: Validate server certificat Issuer: Allow Intermediate certifi Server name: Server name must match Domain name must end	No certificate selected> Select View • Any Trusted CA • • Any Trusted CA • • h exactly in specified name

Select PEAP from the EAP Method drop down box and put a check in the 'Prompt for Username and Password' box if you wish or a check in 'Use Windows Username and Password' should you wish for an automatic connection.

We have now performed all of the necessary steps to connect to the inbuilt Radius server on the USR5453.

When you have selected OK, the MAXg client will authenticate with the AP and you will be presented with this dialogue box:

Authentication inform	ation
Domain\Username:	mydomain\james
Password (token):	
	OK Cancel

Enter the active directory details as described above. If you are not on a domain, you will need to enter the local computer name in the domain section as follows:

Authentication inform	ation 🛛 🔀		
Domain\Username:	localcomputername\user		
Password (token):			
	OK Cancel		

Configuring the Windows XP client.

Locate the USR5453 with the Windows XP wireless client.



Select 'Change the order of preferred networks' from the left hand menu.

🕹 Wireless Network Connection Properties 👘 🔹 🔀
General Wireless Networks Advanced
Use Windows to configure my wireless network settings
Available networks:
To connect to, disconnect from, or find out more information about wireless networks in range, click the button below.
View Wireless Networks
Preferred networks: Automatically connect to available networks in the order listed below:
Move down
Add Remove Properties
Learn about <u>setting up wireless network</u> Advanced
OK Cancel

ssociation Authentica	ation Connection	
Network name (SSID):	USR5453	822.8
-Wireless network key	,	
This network require:	s a key for the following:	
Network Authentical	tion: Open	~
Data encryption:	WEP	~
Network key:	•••••	
Confirm network key:	******	
Key index (advanced	i): 1 💌	
The key is provid	ed for me automatically	

From the 'Association' tab, leave the 'Network Authentication' as 'Open and the 'Data Encryption' as 'WEP'.

The 'Network Key' must be filled in, even though it will not be used. Simply enter any 10 character key, but make sure you enter it the key when asked to confirm.

Select the 'Authentication' tab.

JSR5453 p	roperties		? 🔀
Association	Authentication	Connection	
Select this (wireless Eth	option to provide nernet networks.	authenticated netwo	ork access for
🗹 Enable I	EEE 802.1x auth	nentication for this ne	etwork
EAP type:	Protected EAP	(PEAP)	~
Authenti Authenti Unavaila	icate as compute icate as guest wł able	r when computer infi	ormation is available r information is
		OK	Cancel

Enable IEEE 802.1x and select the 'Properties' button.

Protected EAP Properties
When connecting:
Validate server certificate
Connect to these servers:
Trusted Root Certification Authorities:
ABA.ECOM Root CA
Autoridad Certificadora de la Asociación Nacional del Notaria Autoridad Certificadora del Colegio Nacional de Correduria P Baltimore EZ by DST Belgacom E-Trust Primary CA C&W HKT SecureNet CA Class A C&W HKT SecureNet CA Class B
Do not prompt user to authorize new servers or trusted certification authorities.
Select Authentication Method:
Secured password (EAP-MSCHAP v2)
Enable Fast Reconnect
OK Cancel

No check is needed or 'Validate server certificate'. Select the 'Configure' box.

EAP MSCH	IAPv2 Proper	ties	X
When cor	necting:		
D Auto pass	matically use my ' word (and domai	Windows logon name n if any).	and
	ОК	Cancel	

Remove the check in 'Automatically use my Windows logon name and password (and domain if any)'.

You are ready to connect.

When Windows attempts to authenticate with the USR5453, you will be presented with the following window:

Enter Creden	
User name:	jpearce
Password:	•••••
Logon domain:	
	OK Cancel

Fill in the user name and password exactly as entered into the USR5453 (User Management\ User Accounts). There is no requirement for a domain account to be entered.

Configuring the Intel PROSet/Wireless client.

Install and open the Intel PROSet Wireless client. Locate the USR5453 and select profiles. Follow the on screen prompts or click the properties button.

Wrelegs Networks (3) USR5453 USR5453 This network has security enabled	() ()	/ireless networks found ick Connect.	. Select one and
Cornect Properties	Wreless Networ	ks (3) IS R545 3	
Connect Properties Betresh		is network has security enabled	త
	Cognect	Propgeties	Beliesh

Click next and this moves you onto the 'Security Settings' screen and 'PEAP User'.

Profile Name: USR5453	Security Setting	s			
Security Settings PEAP User PEAP Server	O Personal Security		Enterprise Ser	ounity	
	Network Authentication:	Open		~	
	Data Encryption	WEP		*	
	Enable 802.1x				
	Authentication Type:	PEAP		~	Cisco Options.
	Step 1 of 2: PEAP User-	-		1. A.	_
	Authentication Protocol	MS-0	CHAP-V2		Y
	User Credentials:	Use	the following		M
	User Name:		ipearce		
	Domain:				
	Password		********		
	Confirm Pare	word	-		
	Boaming Identity	icear	CR		_
	Roaming Identity:	ipear	ce		

Put a check in 'Enable 802.1x' and the authentication type is 'PEAP'

uthentication Protocol:	MS-C	HAP-V2	Y
Jser Credentials:	Use t	he following	~
User Name:		ipearce	
Domain:			
Password:		*****	
Confirm Passw	ord	*****	

The Authentication Protocol is 'MS-CHAP-V2' and the User Credentials are the same as added to the USR5453 above. Leave the domain box blank.

For the 'Roaming Identity' – This must also be the same as the user name entered into the USR5453 as above.

On this occasion the user name entered into the USR5453 was jpearce and a password of 12344321JP.

Repeat this for the user credentials and use jpearce for the roaming identity. REPLACE WITH THE NAME AND PASSWORD YOU ENTERED INTO THE USR5453. In 'Step 2 of 2'ensure that there is no check in 'Validate Server Certificate' or in 'Specify Server or Certificate'

Profile Name: USR5453	Security Setting	gs	
Security Settings PEAP User PEAP Server	O Personal Security	• Enter	prise Security
Leve Server	Network Authentication:	Open	M
	Data Encryption:	WEP	~
	Enable 802.1x		
	Authentication Type:	PEAP	Cisco Options
	Step 2 of 2 : PEAP Server		
	Validate Server Certif	icate	
	Certificate Issuer:		
	Any Trusted CA		¥.
	T 0 10 0	·* · · ·	
	Specify Server or Let	thcate Name	
	Server or Certificate	Name:	
	O Server name	must match the spe	cified entry exactly
	Domain name	e must end with the	specified entry

Click OK and you are ready to connect!!

Tools	Advanced Profiles He	łp	
6	You are cor	nnected to USR	5453.
	Network Name: Speed: Signal Quality:	USR5453 54.0 Mbps Good	Details
	IP Address:	172.21.24.143	
Wirele	ess Networks (3)		
	USR5453	Connect	ed 🕤 g
	📋 🗂 This network has s	ecurity enabled	🖌 😅
			Defeat
Dist	co <u>n</u> nect Prop <u>e</u> rties	hre	<u>R</u> efresh
Dise To man- he Prof	connect Properties age profiles of previously co ites button.	nnected wireless networks.	<u>R</u> efresh click <u>P</u> rofiles

This document was written using:

USR 805421 Wireless USB MAXg stick connecting with US Robotics MAXg wireless client.

Intel Centrino Pro /Wireless 2200BG connecting with Windows XP Service Pack 2 wireless client.

Intel Centrino Pro/Wireless 2200 BG connecting with Intel PROSet/Wireless Client version 10.1.1.3

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