



Reviewer's Guide

WHAT'S PROVIDED



(1) Ruckus VF2825 Router



(1) Ruckus VF2111 Adapter



(2) Power Adapters



(2) Ethernet cables



(1) Tests Kit CD
(includes videoserver and client software, multimedia content, etc.)

Introduction

This guide is designed to help you install and test the new Ruckus Wireless Multimedia system.

The Ruckus Wireless multimedia system is designed to enable picture-perfect transmission of digital video signals over standard 802.11 Wi-Fi. The system is the first to mitigate interference by continuous learning about the RF environment and keeping track of the best path through the air for any sender and receiver pair.

The Ruckus VF2825 multimedia router and the VF2111 adapter integrate smart-antenna (i.e. BeamFlex) technology patented by Ruckus Wireless. This smart antenna technology leverages MIMO diversity techniques to pick the best RF path between any two endpoints on per-packet basis.

Unlike conventional MIMO products, the Ruckus smart antenna system is agnostic to the baseband Wi-Fi chipset. This means that the technology can operate over any single or dual radio Wi-Fi chipset.

The Ruckus VF2825 router also integrates sophisticated traffic engineering software called SmartCast. This software provides advanced packet inspection, handling, queuing and scheduling to ensure optimal performance of concurrent multimedia traffic being transmitted over the system.

Typically the Ruckus VF2111 adapter will attach to (or be integrated within) a set top box that decodes the IP signal and sends it to a television in composite video or a format the TV understands. In this testing, the client laptop is taking on the role of the set top box and the TV.

The Ruckus VF2825 supports two separate wireless SSIDs. The "service provider" SSID is designed for multicast video delivery and provides a bridged connection to the WAN port on the VF2825. The "home" SSID provides NAT/routing to associated devices.

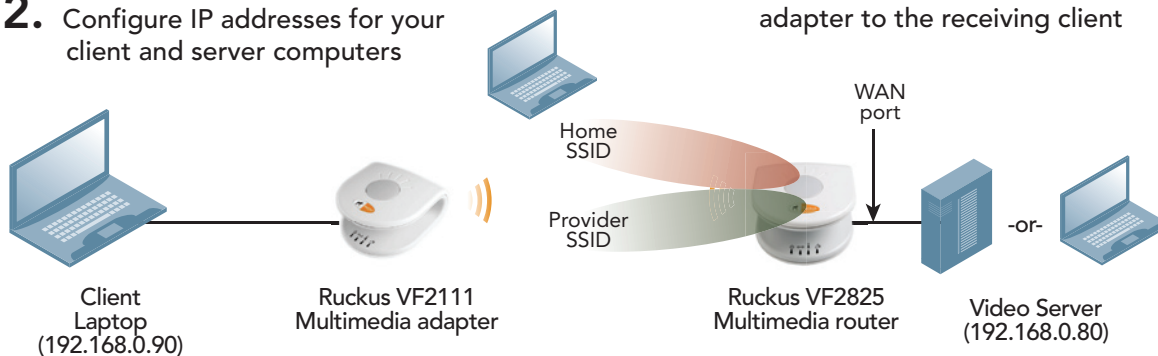
The testing of this system requires streaming digital video between two points. Below is a quick illustration of what you'll need to do to quickly set up the system for testing.



The Ruckus router and receiver come pre-paired so no configuration is necessary. There are multiplied SSIDs available. However do not stream the sample video on the "home" SSID as it is only designed to support consumer data applications.

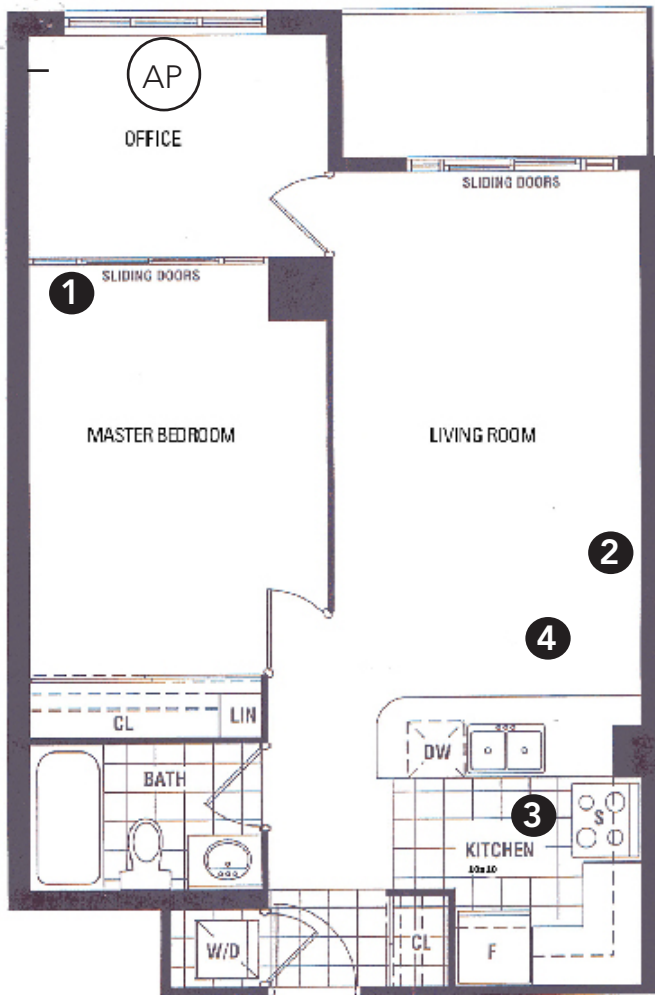
A DHCP server is only provided on the "home" SSID. Please configure IP addresses manually for devices connected to the "service provider" SSID as described in this document

1. Turn-off/disable wireless networking and on your laptops/servers
2. Configure IP addresses for your client and server computers
4. Connect the Ruckus VF2825 to the "server" streaming the content and the Ruckus VF2111 adapter to the receiving client



3. Install Video LAN (VLC) software (provided on Ruckus CD) on the client and server, copy media clip to be streamed on server
5. Start streaming content

What to Test



The Ruckus Wireless multimedia system extends the reach and performance of data-only applications, as well as enabling concurrent multimedia applications (such as video and data) over standard 802.11 Wi-Fi.

The best way to test the Ruckus Wireless multimedia system is to stream digital video over the RF spectrum, increasing the distance between the sender (AP) and receiver (adapter) while introducing various RF obstacles such as walls and interference. Here are five useful test cases to consider:

1. 20 feet away (one wall)
2. 40 feet away (two walls) with microwave on for two minutes
3. 60 feet away (three walls)
4. 40 feet away while simultaneously executing a large file transfer
5. 40 feet away receiving a multicast stream

Inevitably the broadband IP connection coming into the home is nowhere near the television. The office is a good place to locate the Ruckus VF2825 and video server.

- 1 From this point, you should begin streaming traffic from the server, moving into the next room (one wall) while keeping track of the quality of the video and any artifacts you might experience.
- 2 Next, try moving into the living room (two walls) and introducing RF interference by turning on the microwave oven for two minutes in the kitchen.
- 3 Then moving into the kitchen (three walls) to see from how far away you are able to maintain a quality viewing experience.
- 4 Then move back into the living room (with the video still streaming).
- 5 (optional) Transfer a file between a computer connected to the VF2825's LAN port and a computer associated with the "home" SSID. Observe if there is any video impact.

IPTV is typically delivered as a multicast stream. As such it treated as best effort traffic. Most Wi-Fi systems on the market are unable to handle multicast traffic. This is critical to IPTV distribution in the home.

Installation Details

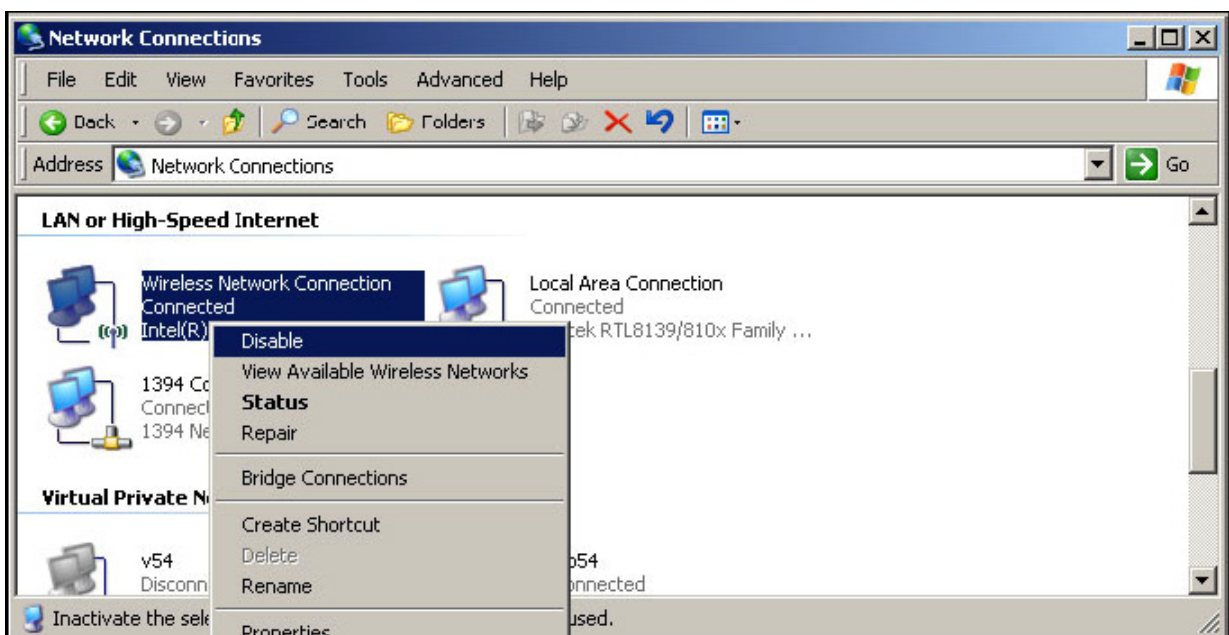
For the review, Ruckus Wireless has already pre-configured network parameters into the AP and receiver that have been shipped to you. For those who want to custom-configure the device, we have shipped product documentation along as well to help you do this.

This quick-start guide was written for Windows XP, if you use a different version of windows the details will not match but the steps will be the same. Please choose one laptop to be used as your server, and one to be used as your receiver.

Step 1: Turn off wireless networking on your laptops (if applicable)

Turn off the hardware switch on your laptops if you know how, otherwise:
You can disable wireless networking from the networking control panel:

1. Go to your start menu -> **Control Panels->Network connections**
NOTE: You may need to click "classic view" in the control panels first.
2. You should see an icon labeled "wireless network connection" or something similar.
3. Right-click on this icon and click "disable"



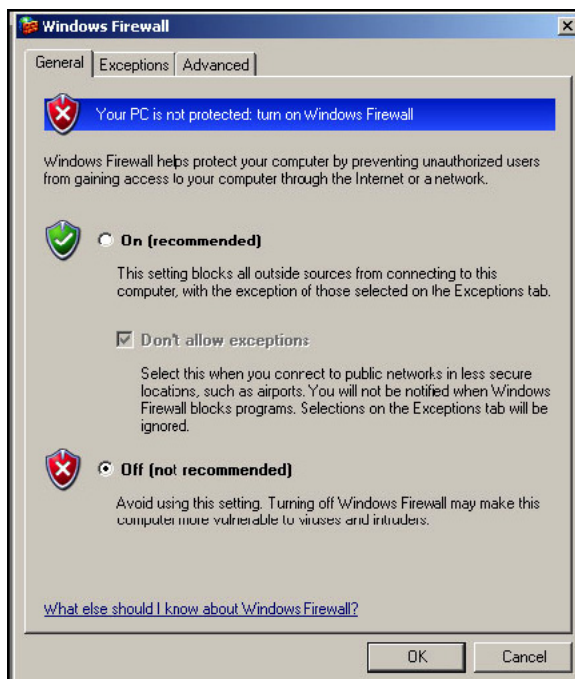
Step 2: Make sure firewall software is disabled on your laptops

If you have installed third-party firewall software (such as Symantec or McAfee), you are

responsible for making sure the firewall is disabled during this test.

Instructions for disabling the built-in windows firewall:

1. Go to your start menu -> **Control Panels** -> **Windows Firewall** and click "off" and then click OK.

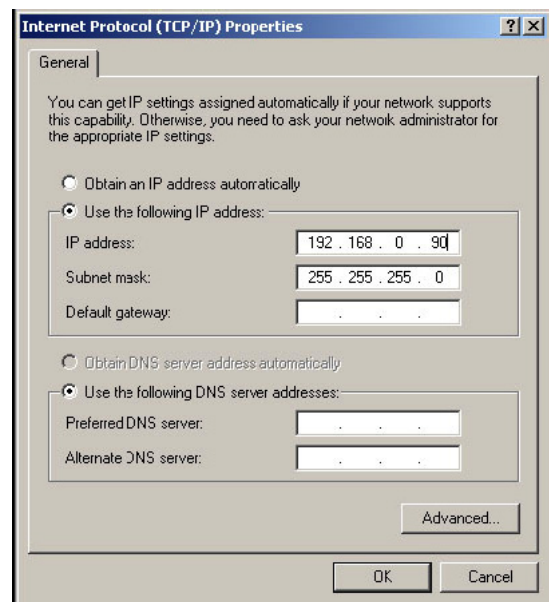
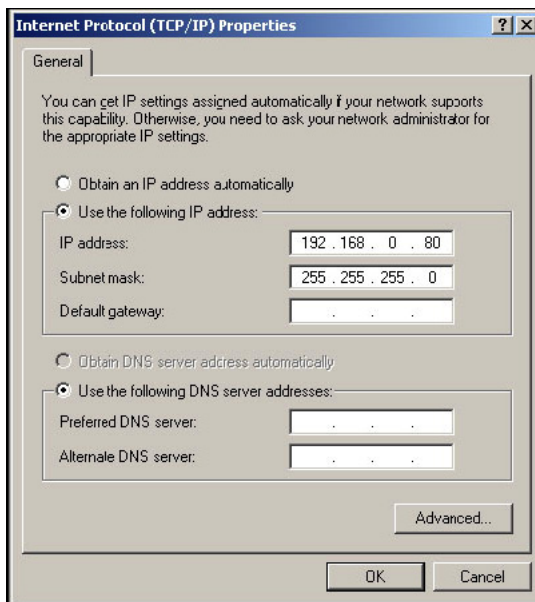


Step 3: Setup IP addresses for the laptops.

You want to set up an address of 192.168.0.80 for the server laptop and 192.168.0.90 for the client laptop

1. Go to your start menu -> **Control Panels**->**Network connections**. Right click on "Local Area Connection" and select "properties." Scroll down and select "Internet Protocol (TCP/IP)", click properties.
2. Click "Use the following IP address"

3. Type in 192.168.0.80 for the IP address of the server laptop



4. Type in 192.168.0.90 for the IP address of the client laptop
5. Type in 255.255.255.0 for the subnet address of both laptops, leave the rest blank, press ok, press ok

Step 4: Install VLC & Media clip on the server and receiver laptops

Launch the vlc-0.8.2-win32.exe installer application from the CD
Follow the instructions and choose the default options for installation

Step 5: Copy the media clips from the CD onto the server laptop

Step 6: Connect the Ruckus AP and Ruckus Receiver

1. Identify the Ruckus VF2825 and connect the Ethernet cable from the server to the WAN port (far right port) of the Ruckus VF2825 router.
2. Identify the Ruckus VF2111 receiver and connect the Ethernet cable from the receiver laptop and Ruckus VF2111 receiver.
3. Connect power to the Ruckus VF2825 router.
4. Connect power to the Ruckus VF2111 receiver.

Enabling Multicast on VLC software

To enable multicast video streaming on the VLC server:

1. Start VLC (from the desktop or the start menu)
2. File -> Open File
3. Click Browse, choose the desired video clip, click open
4. Check "Stream Output"
5. Click "Settings..." (Next to stream output) Check "UDP", type in 239.255.0.1
6. Make sure "port" is set to "1234"

To start receiving the streaming clip on the receiver laptop

1. Start VLC (from the desktop or the start menu)
2. File -> Open Network Stream
3. Select the UDP/RTP multicast option
4. Enter the multicast address 239.255.0.1
5. Make sure the port is set to "1234", and "stream output" is NOT selected.
4. Click OK, Click OK
5. The video clip should now start playing

Troubleshooting

Listed below are some things to check if you can't see the streaming on the client:

- Check that the cables are fully connected
- Check the IP addresses configured correctly (192.168.0.80 for the server and 192.168.0.90 for the client)
- Check to see if, from the client, you can ping the server: 192.168.0.80
- Reboot computers
- Close the VideoLAN application and restart it
- Power off the Ruckus devices and then power them back on
- Multicast video delivery is designed to function on the "service provider" SSID only. Do not attempt this test on the "home" SSID.
- Ensure the video server is connected to the WAN port
- The "service provider" SSID, by design, will not provide DHCP services

Testing Addendum

In the event you want to test out the router functionality of the VF2825 please follow the instructions in the quick-start guide for information on how to connect it to your broadband connection.



Please note that streaming multicast video is not supported on the home SSID.

The VF2111 by default, and by design are associated to the service provider SSID. In the event you would like to test the VF2111 with the home SSID (to use with a computer in a difficult-to-reach location in the house for example) follow these steps to reconfigure the VF2111 to work with the home SSID:

1. Configure a computer to the following IP address on its Ethernet connection:
IP: 192.168.0.100
Subnet: 255.255.255.0
2. Connect an Ethernet cable between the VF2111 and that computer.
3. Launch a web-browser to 192.168.0.254
4. Login with
username: super
password: sp-admin
5. Go to the Configuration -> Wireless section and change the wireless settings to match that of the home SSID (by default the home SSID is "V54-HOME001")
6. Click update

To re-configure the VF2111 to connect to the service provider SSID again after configuring it to associate with the home SSID do the following:

1. While the VF2111 is powered on, insert a paper clip into the reset hole in the right-rear of the unit and hold for 8 seconds.
2. The unit will reboot, in about a minute the two right-most LEDs on the front will begin flashing in unison.
3. Connect an Ethernet cable between the VF2111 and the VF2825's WAN port
4. Wait for the two right-most LEDs on the VF2111 to stop flashing.
5. Unplug the Ethernet cable from the VF2111