ATI FireProTM RG220

& PCoIP with Parallels

Revision 1.0



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Revision History

Revision	Date	Comments
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1. OVERVIEW

This document is intended to give a basic understanding of how to configure the ATI FirePro[™] RG220 and the PCoIP clients for a direct connection to the Host System. It assumes that user has basic understanding of ATI FirePro RG220 and its features (see References).

1.1 HARDWARE REQUIREMENT

- ATI FirePro RG220 card
- AMD FirePro 2D/3D graphics card to run the host machine
- Thin Client: Dell FX100 or WYSE
 - o Each thin client station consists of a monitor, keyboard and mouse, and network cables
- Desktop system capable of handling at least one PCI or PCI-e graphics card and one PCI-e x8 or x16 slot for the ATI FirePro RG220
- Virtualization Technology support in the system BIOS
- Processor: Workstation or Server based on at least a quad core processor
- Memory: at least 8GB of RAM
- Hard Drive: Depending on the number of clients, each client requires 10Gb of space at a minimum (standard setup is 32Gb)
- Monitor, keyboard, and mouse for host system
- Network cable(s), Cat5 or better

1.2 SOFTWARE REQUIREMENT

- Parallels Workstation 4.0 Extreme Software
- Host Operating System
 - o Windows 64Bit OS
 - Windows XP SP2 or SP3, Windows 7, or Windows Vista SP1
 - o 64bit Linux
 - RHEL 5.3, 5.4, and 5.5
 - Other distributions might work but were not tested
- Guest/Client Operating System
 - o Windows 64Bit OS
 - Windows XP SP2 or SP3, Windows 7, or Windows Vista SP1
 - o Windows 32Bit OS
 - Windows XP SP3, Windows 7
 - o 64Bit Linux
 - RHEL 5.3, 5.4, and 5.5
 - Fedora 10
 - Other distributions might work but were not tested

1.3 REFERENCES:

- ATI FirePro RG220 Remote Workstation Graphics: <u>http://www.amd.com/us/products/workstation/graphics/firepro-remote-graphics/Pages/rg220.aspx</u>
- ATI FirePro RG220 DataSheet: <u>http://www.amd.com/us/Documents/ATI-FirePro-RG220-Datasheet.pdf</u>
- ATI FirePro RG220 white paper: <u>http://www.amd.com/us/Documents/48441A_FirePro_RG220_Whitepaper.pdf</u>
- Parallel Software: <u>http://www.parallels.com</u>

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2. CONFIGURATION

2.1 HARDWARE CONFIGURATION

- Install the ATI FirePro RG220 card/s in the system in either the PCI-e x 8 or x 16 slot/s
- Install the host graphics adapter (does not need to support 3D for the purpose of a host)
- Initial Card Configuration instructions:
 - o Connect an RJ45 cable to Ethernet controller attached to system
 - $\,\circ\,$ Connect the other end to the RJ45 Output of ATI FirePro RG220 Input
 - Open Network Settings -> TCP/IP(v4) Settings --> Input the following:
 - IP address: 192.168.1.101
 - Subnet mask: 255.255.255.0
 - Default gateway: 192.168.1.1
 - \circ Open Internet Explorer browser and enter 192.168.1.100 in the address bar
 - \circ When the certificate screen comes up click on Continue to this web site
 - o Click login (no password needed)
 - \circ Move the mouse to Configuration and click on Initial Setup
 - \circ On the screen that comes up put the checks in for Enable HD audio and Enable Microsoft boxes
 - $_{\odot}$ Take the check out of the DHCP box and set the IP to 192.168.1.100 if it isn't already
 - \circ Click on Apply and then continue
 - $\ensuremath{\circ}$ Disconnect the network cable from the host machine network
 - o Reset the Network settings to DHCP
- Configuration of the Thin client
 - \circ Turn the unit on
 - o Click on "Options" (top Left)
 - o Click on "Configuration"
 - \circ Click on Unlock (enter password if there is one)
 - Uncheck the box "Enable DHCP:"

hange the netw	ork setting	s for t	he de	vice	
Ena	ble DHCP:				
I	P Address:	192	168	1	10
Sut	onet Mask:	255	255	. 255	.0
	Gateway:	192	168	1	1
Primary DA	IS Server:	192	168	1	1
Care Street and a second	-		6	6	1 In

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 \odot Set the IP to 192.168.1.101

 \circ Select "Apply" to save the settings \circ Click on the "VMWare View" tab

VMware View
Configure the View Connection Server (RDP only) settings for the device
To enable this feature, the "Enable Connection Management" checkbox under "Connection Management" tab must be unchecked
Enable VMware View: 🗌
Identify Connection Server by: IP address OFQDN Connection Server
Port: Default is 80)
SSL: Use secure connection (SSL)
Auto connect: Always connect to this server at startup
Apply Cancel

 \circ Uncheck the "Enable VMWare View" box

- Select "Apply" to save the settings
- \circ Click OK and restart the unit
- \circ Connect the ATI FirePro RG220 Output to the Thin Client via the RJ45 connection
- Connect the network cable for the client to the ATI FirePro RG220 direct via the outgoing connection or through a switch to the outgoing connection of the ATI FirePro RG220 card



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2.2 SOFTWARE CONFIGURATION

On the Host machine, OS will be installed and configured. After that, each Thin Client can install its software individually or it can also be done at the Host machine. Each Thin Client can have different versions of the OS and software as desired – see the above section for the OS recommendation (see References for Parallel software on supported OS)

- Install host OS from the OS disc copy (or if the system already configured with an OS on it, no other work needed)
- Install all necessary windows updates such as DOTNET3.5 or above, DirectX9 or better.
- Install host graphics driver and any other drivers for the system (mouse, network, audio, etc)
- Install ATI FirePro RG220 Graphics card driver (download at amd.com)
- Install Parallel software and then run update at the end of the installation process.
- Launch Parallel application
- In Parallel application, go to File >New Virtual Machine, pop-up window:

	Select Ope	erating System	Type and Vers	sion	
	Select the ty machine:	pe and version of the op	erating system you wo	uld like to install in the v	/irtual
	Type:	Windows		•	
	Version:	Windows Vista		•	
C					

- Select the Type of OS install and the Version of the OS
- Click "Next"
- Give the Virtual Machine a Name and Location (if other than default) and then click the Advanced button on the bottom left of the window

Application Note - RG220 & PCoIP with Parallels

	Name and Specify the vir	Location		
22	Name:	Windows 7 1]
	Location:	C:\Users\T7500x64\Documents\My Pa	arallels\	Choose
-				

• On the Advanced window, select the number of virtual processors and memory that should be assigned to this virtual machine

CPU and Memory Options	Concellines	
Specify the CPU settings for y	our virtual machine:	
Number of CDI Inc. 1		
number of cross.		
Specify the amount of memory	(RAM) for your virtual machine:	
1024 M	AB (A)	
4мв 0	······································	65536 MB
Recommended Range: ! Optimal Size:	512 MB - 2840 MB	
ep ana ecc		
[OK Cancel

- Click "OK"
- Click "Create"
- Select "Typical" on the Virtual Machine Type page

Application Note - RG220 & PCoIP with Parallels



- Click "Next"
- Select the location of the Operating System image that is being installed (Default is to pull this from the OS disc)

	Prepare to Install Operating System
	The "Windows 7 1" virtual machine was successfully created.
1	Select the installation files source to install the Windows 7 operating system in this virtual machine:
	Real CD/DVD-ROM Drive
	Drive: Default CD/DVD-ROM
	CD/DVD Image
	File: Choose
	Click Done if you do not want to install the operating system now.

- Click "Start"
- Go through the regular Operating System install steps
- After the Operating System is installed and running in the bottom right of the Parallels window, click on "Install Parallels tools" (this will run automatically and reboot the system)
- Once the Operating System is up and running again launch Parallels window
- Click on File > Preferences
- Click on "Intel Vt-d" and set the ATI FirePro RG220 card listed in PCIe Devices to Virtual Machine for each card installed in the Host system

Application Note – RG220 & PCoIP with Parallels

General	Specify the PCIe devices assignments:			
Keyboard M	PCIe Devices		Assignment	T
Memory	ATI Juniper HDMI Audio [Radeon HD 5700 Series] (3-0-1)		Host Computer	
USB	ATI FirePro RG220 (6-0-0)	100	Virtual Machine 🔫	
Update	Teradici Corp. TERA1200 PC-over-IP Host (7-0-0)		Host Computer	1
Feedback	Teradici Corp. TERA1200 PC-over-IP Host (7-0-1)		Host Computer	
Intel VT-d	Intel 82801JI (ICH10 FamilyD Audio Controller (0-27-0)		Host Computer	
Proxy Server	LSI Logic / Symbios Logicess Fusion-MPT SAS (8-0-0)		Host Computer	
	Host computer restart will be required Device information Name: ATI FirePro RG220 (6-0-0) Type: Video Card Assigned to: Host Computer PCL address: 6:0:0:1002.9557			

Click on USB and click on radio button for Connect to Virtual Machine to attach the mouse and keyboard to the virtual machine environment

General	When a new USB device is detected:	
(eyboard	Connect it to the computer	
Memory	Connect it to a virtual machine	
Vetwork	Ask me what to do	
ISB		
Jpdate	Permanent assignments:	
Feedback	USB Device	Connect To
intel VT-d		
Proxy Server		
		2

- Click "OK"
- Click Virtual Machine > Configuration, a popup will come up with a list of devices connected to the Virtual Machine

Application Note – RG220 & PCoIP with Parallels

virtual Machine Conliguratio	Windows /		·
Optimization	*		
Features		JSB Controller	
🚉 Services		I Enabled	
Shared Folders			
着 Shared Profile			
🚨 SmartMount	No USB devices are co	nnected.	
SmartGuard			
Coherence			
/ Hardware			
DPU			
Memory			
Jideo	H C		
Floppy Disk			
CD/DVD-ROM 1			
🖾 Hard Disk 1			
Wetwork Adapter 1			
Parallel Port 1			
O Sound			
USB Controller			
	*		
• -			
Show advanced settings			OK Cancel
,			

Click on the Plus button in the bottom left and a popup of additional device will come upClick on Video Card

Add Hardware Wizard					
	Select Device	you would like to a	dd:		
	Floppy Disk	CD/DVD-ROM	Hard Disk	Generic SCSI	
	Serial Port	Parallel Port	Intel VT-d PCIe	Video Adapter	
	Network Adapter	Sound	USB Controller		
	(i) Click Add Typical Device Next if you prefer to cu	button to add a d stomize device's se	evice with common set	tings in most cases	. Click
	Add Typical Device		Back	Next >	Cancel

- Click "Next"
- Assign the address for the card by pressing the down arrow

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Add Inte	el VT-d Video Adapter he video adapter you want to use:	
Adapter:	ATI FirePro RG220 (6-0-0)	
	Back Add Device	Cancel

- This is based on the addressing of the system bus (will need to try this a couple of times to get the addressing correct to specific Thin Clients)
- Click "Add Device"
- Start the Virtual Machine
- Go to the Thin Client and click "Connect"

Connect

 Depending on the configuration of the Thin Client it will auto connect to the Host or a pop-up window will show the address, check the address and click "OK" to connect

Discovered I	Hosts		×
Selec	t from the f	ollowing available hosts:	
		5	
[0]	IP/MAC:	192.168.230.108 / 00-17-FD-10-00-33	
[1]	IP/MAC:	192.168.230.107 / 00-17-FD-10-00-32	
		OK Cancel	
	20-		

- Once the Client Operating System is running, install the video driver for the ATI FirePro RG220 for the specific Operating System that is being used for the client
- The client is fully functional and ready to install any applications needed at each client

2.3 TROUBLE-SHOOTING/ISSUES

- Recommend to not enable or use audio as if it is installed and enabled, all clients system will get same audio output.
- If the Thin Client does not connect to the Host System
 - \circ Shutdown the Client Operating System
 - Verify the Device Address for the ATI FirePro RG220 card then re- start the Client Operating System
 - Try moving the network cable to the Incoming connection on the card then re- start the Client Operating System
 - o Try another network cable then re- start the Client Operating System
- If the Mouse and Keyboard do not connect
 - \circ Disconnect the mouse and keyboard from the thin client and reconnect them
 - o Shutdown the Client Operating System
 - \circ Click Virtual Machine > Configuration
 - Set USB to "Ask me what to Do"
 - o Start the Client Operating System
 - $_{\odot}$ A popup will come up asking what to do with the Mouse and Keyboard
 - Select Virtual Machine: if there are more than one Client Operating Systems and Thin Clients, select the Thin Client's Operating system of which the devices are attached to
- If the Client Operating System fails to load
 - o Click the Shutdown Button in the Parallels window
 - o On the next launch of the Client Operating System, click the mouse in the window
 - The Client Operating System will come up to the menu to select how to start the Operating System
 - The Client Operating system will be slow through this part as only 1 processor is being used with 128M of memory
 - \circ Select how the Operating System should start and try again
 - If it fails a second time, shutdown the Client Operating System and select "Safe mode" on the next launch (it will run slowly)
 - o Restart the Operating System in normal mode

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