Radmin VPN

General Information

Radmin VPN is a VPN service, which can also be used for free. The software is interesting because it makes it relatively easy to set up a VPN where you can play LAN games over the Internet. Users can be invited to separate groups, which can also be private (password protected). The biggest disadvantage, however, is that all hosts are located in a large subnet with mask 255.0.0.0. This means that 16,777,214 hosts can be reached via broadcast or single IP query. Thus, games that use this method to find matches in the same network are practically unusable, as the sheer number of hosts can hardly be scanned. On the other hand, games with direct IP input can be played very well with it.

The software is available here.

Network Card Metric

On Windows, the so-called metric defines the priority, in which network cards are used. E. g., usually it is reasonable to place the LAN card first, and then Wifi, as the LAN cards usually have more bandwidth and a more stable connection.

So if a game only uses the first network card, it uses the network card with the lowest metric value set for any network card's TCP/IP protocol configuration of your system. You may set this manually at any time. Radmin VPN also adds a new network card, which serves to direct traffic through the VPN. It is of course also part of this hierarchy. However, it sets this network cards metric to 1 after every system start (or to be precise, after starting the service »Radmin VPN Control Service«), which usually makes it first network card, even before your local network.

In many cases this can lead to problematic behavior, such as games all of a sudden not finding any servers hosted in the own LAN or local computers not being found for SMB access automatically any more. In order to omit this, it may help to reduce the metric to a lower priority/higher value. As this will be reset after a reboot automatically to value 1, it usually is sufficient to set the value to something like 20, to get access to the local network again and restart the system, once this is not desired any more.

Script for Setting the Network Card Metric automatically

You can create a script, that automatically sets the metric of Radmin's VPN adapter to 20. Follow these steps:

1. Create a new powershell script with a name like `set_vpn_metric.ps1`.
2. Edit it and enter the following command into it: `Get-NetAdapter | Where-Object -FilterScript {$_.InterfaceAlias -Eq "Radmin VPN"} | Set-NetIPInterface -InterfaceMetric 20`.
3. Create a link to that script with the path

```
C:\Windows\System32\WindowsPowerShell\v1.0\powershell.exe -f
"drive:\path\to\set_vpn_metric.ps1", with
drive:\path\to\set_vpn_metric.ps1 being the actual full file path to the newly created
```
script. Adapt it to your own file's location.
4. Open properties of the newly created link and click on **Advanced** and select **Run as Administrator** (this is not available if you set the link to point directly to the script only).
5. Enter `powershell` into the start menu and run it with administrator privileges(!).
6. Enter `Set-ExecutionPolicy RemoteSigned`. This will allow Windows to run Powershell scripts. **Note**: *This may be considered a security risk, as such scripts may be used to alter system settings (that's what our script from above actually does), especially when running scripts of questionable origin!* So when using this option, be careful with scripts downloaded from the internet!

When you now open the newly created link, you are either asked for username and password of an existing administrator account (if you are working with a pure user account) or simply asked for confirmation to run that script (if you already use an account with administrator privileges). Once run, the metric for the „Radmin VPN" adapter is set to 20. So games should not continue to use the VPN adapter to look for games in the locale network. The change is immidately, but some games may require a restart in order for the change to affect them.

I Cannot Find My Other PCs or Games Locally

You might run into the problem, that you cannot find computers on the local network any more, automatically. You can try and connect to them via their IP, possibly even with their host name, but in the list of found hosts, your local computers do not turn up on the »Network« list.

What is this Happening?

As Radmin resets the metric of its virtual network card to 1 automatically, it will become the first network card to be used. Many games simply only use one network interface (e.g. Unreal Tournament 2004), when querying the local network. As this is usually only the first one, you can only find games on the Radmin VPN network. Of course, when entering the IP address manually, the computer knows exactly on which network card he can reach the destination IP and simply uses the right one. So you can connect directly, but not query all local servers e.g. via Broadcast.

Why are they doing this to me?

Actually, depending on your situation, that might be a desired behavior. When above mentioned games are to be used in combination with Radmin (you actually *want* them to find games on the VPN) it *becomes necessary* for the Radmin VPN to be the first network to be present. Otherwise you would not find games hosted somewhere on the VPN. So it is actually an enhancement of the user experience. The major drawback of course is the situation, when you have Radmin installed and active, but right now want to find games on the LAN, not the VPN. But you can solve that problem.

What can I do about it?

The answer is obvious: deactivate the VPN network card, or change its metric. It is *not* sufficient to simply use the »off« switch of Radmin, as the network card will still be present and used and its metric is still set to 1. However, when trying to change the metric or deactivate the network card, you will notice, that it will be turned back momentarily. So it's not *that* simple.

The only way is to first deactivate the Radmin service and then either change the metric to something higher than you LAN card or deactivate the Radmin network card altogether. The service to be deactivated is called »Radmin VPN Control Service« or shorter »RvControlSvc«. If you set this service to be started manually and stop it, you can finally deactivate the virtual network interface. Both requires administration privileges. After restarting your computer, you should be able to see your surrounding computers once again. But be aware that you have to start the service manually from now on, as you just set it this way. So when using Radmin for online gaming, start the service, wait for the network card to come on and only after that you can expect Radmin to work properly.

Hint: After updating or re-installing Radmin you will find, that the service is set to start automatically once again. So when using this method, check back on the services after installing Radmin again.

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