UT-Soft v2.4 Software Modifications
04/08/2020

UT-Soft v2.4 includes several feature enhancements intended to simplify use of UT-Soft in a home-office scenario. These include allowing the DCB Virtual Adapter to automatically obtain an address from the remote trusted network, allowing the DCB Virtual Adapter to have a gateway address, and giving the user a choice of routing WAN traffic through either the local gateway or through the remote gateway. These features are built upon the routing feature added in UT-Soft v2.3. In order to use these features, the user must be allowed to run UT-Soft as an administrator. Please see the UT-Soft Quick-Start guide for instruction on running UT-Soft as an administrator.

Overview

Users familiar with running UT-Soft have read, or been told by our tech support, to never assign a gateway address to the DCB Virtual Adapter. In addition, we have always recommended never configuring the adapter to *obtain an address automatically*. The reason has to do with maintaining a viable gateway route from your PC to reach the UT server on the Internet. If the DCB Virtual Adapter has a default gateway, once UT-Soft connects it will become active and the Windows system might attempt to route UT-Soft tunnel traffic through the Virtual Adapter instead of through your local gateway. Communication to the UT server is lost and the connection drops. This cycle repeats over and over again.

Another issue with UT-Soft and the DCB Virtual Adapter has centered around Window's designation of a *private network* verses a *public network.* Windows applies different security policies based on this classification allowing more free access to a private network. Windows users are familiar with the dialog box the system displays when it encounters a new network, prompting the user to choose between public or private. When it comes to the DCB Virtual Adapter, Window's seems to have a problem classifying the network. With Windows 10, it doesn't even ask for a classification. It automatically classifies it as public and provides no GUI page allowing the user to change it to public.

The problems of network classification and gateways are related. Windows identifies a network by its gateway. If there is no gateway, it can't identify the network. So it will label the network as *unidentified* and give it a classification of public. Although there are ways to force the unidentified network to private, the classification is temporary.

Configuration

The problems discussed in the overview are addressed with the addition of three configuration options. These options are related to routing and can be found in the *Routes* configuration dialog.

Guard Server Route – This is the feature that will allow the DCB Virtual Adapter to have a default gateway address. The gateway can be statically configured or the DCB Virtual Adapter can obtain an address from a DHCP server on the trusted network. This feature works by causing UT-Soft to scan the routing table, prior to connecting to the UT-Server, and identifying the gateway on the local network. UT-Soft then inserts a host-route, into the routing table, for the UT-Server. Host routes always take priority over default gateway routes. Thus, any default gateway routes added to the routing table as a result of UT-Soft connecting to the UT-Server will not alter the communication path between UT-Soft and the UT-Server.

Prioritize Remote/Local Default GW – These two options give control to the user as to which default gateway to use for WAN traffic. By WAN traffic, we mean traffic that is not destined for the home network nor destined for the work network. The choices are to route this traffic through the local router, or instead, route this traffic through your office router. It boils down to which router you trust more. While on a home network, you may want your non-work related traffic to hit the Internet via your your home router. In this case, you would prioritize the local default gateway. However, if you are sitting in a coffee shop, you might prefer all of your WAN traffic be routed via your office router. This means it is safely encrypted as it traverses the coffee shop network. The concept is similar to using a third-party VPN, except in this case, your office is the termination point.

This feature works by causing UT-Soft to scan the routing table, locating the preferred default gateway. Once located, it installs a pair of higher priority routes, via that same gateway, that will override the non-preferred default gateway route. These two routes have a subnet mask of 128.0.0.0 which take priority over any routes with a subnet mask of 0.0.0.0.

If neither of these options are selected, then the inherent priority assigned by the system will determine the default gateway in use. It will be a result of the metric and the order of the route in the routing table.

Changing a network from Public to Private

After adding a gateway to the DCB Virtual Adapter, you may still experience security related issues due to the network being classified as public. Under Windows 10, it is not always obvious how to view or change this designation. The *Network Connections* GUI does not show all interfaces, often hiding the DCB Virtual Adapter. Fortunately, with the use of Windows PowerShell, the network classification can be easily viewed and changed.

First, open Windows PowerShell (Admin).
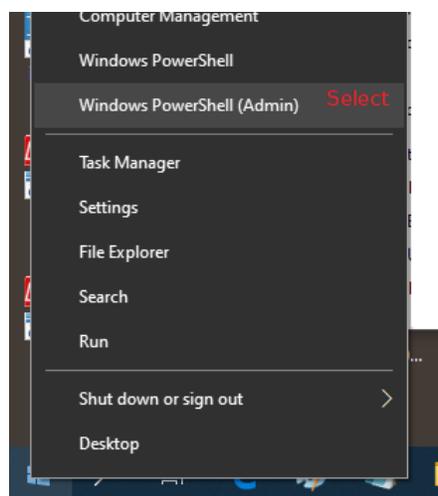
At the PowerShell prompt, run the command Get-NetConnectionProfile.

Locate the interface that corresponds to the DCB Virtual Adapter. If the system shows a network category of Public, make note of the InterfaceIndex.

Run the Set-NetConnectionProfile command to change the Network Category, making sure to substitute for your specific Interface Index.

You can rerun the Get-ConnctionProfile to verify the command was successful. Once done, the system will remember Network Category and it shouldn't be necessary to repeat this operation.