Sony Ericsson GC82/3/5 EDGE PC Cards: FixTCP Tool for Optimising EDGE TCP/IP Performance

Introduction

This document and the FixTCP utility are aimed at IT Professionals seeking to optimise data throughput using the Sony Ericsson GC82, GC83 and GC85 EDGE PC Cards.

Correct TCP/IP settings are critical for high data throughput in EDGE networks. An incorrect setting or, in more complex situations, a mismatch of settings, can cause throughput to be substantially reduced.

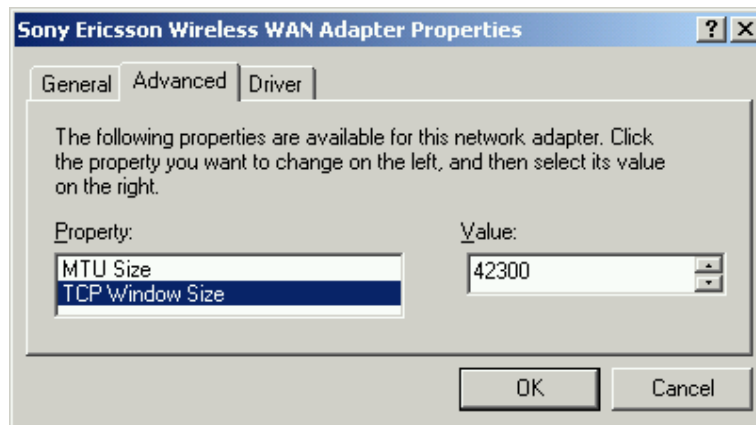The TCP/IP parameters in question and the correct settings* are:
TCPWindowSize   42300
MTU   1450

*Your network operator may specify different values for optimal performance using their mobile network configuration.

The Windows system default for TCPWindowSize is 16,384 bytes for Windows® 2000 and Windows® XP.

The Sony Ericsson EDGE PC card installs an NDIS WAN Adaptor, the "Sony Ericsson Wireless WAN Adaptor". The correct settings are included as properties of the Adaptor and are set automatically upon installation.

For most users, these automatic settings in the WAN Adaptor are sufficient.

Typical Issues

1. Virtual Private Network (VPN)

Many VPN clients operate by routing communication via a network adaptor that is part of the VPN software. Typically this VPN network adaptor will operate at the system default TCPWindowSize, thereby creating a mismatch between the VPN adaptor and the Wireless WAN adaptor.

The solution is to set the TCPWindowsize parameter globally, thus ensuring that both the VPN's NDIS adaptor and the Wireless WAN adaptor are set to the correct value.

2. Windows 2000 pre-SP4

Service Pack 4 (SP4) is required to use the EDGE PC CARD on a laptop running Windows 2000. Whilst the driver and application software will install correctly, the TCPWindowsize parameter for the Wireless WAN Adaptor will not be set to the correct value. The recommended fix for this is to install SP4. Where this is not possible, the global TCPWindowsize parameter may be set instead.

In both cases, the performance improvement is most noticeable on large file transfers such as FTP and web downloads.

FixTCP

FixTCP is a command line utility for Windows 2000 and XP which sets the global TCPWindowsize parameter to the correct value. It does this by inserting a key into the Windows Registry:

'HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\Tcpip\Parameters\TCPWindowSize with value 42300

This key is not present by default. You may wish to check your system and note the existing value if the key has already been created.

To run and set the recommended TCPWindowSize:

```
C:\FixTCP
```

Reboot the machine for the setting to take effect.

To run and set a different TCPWindowSize value:

```
C:\FixTCP /RWIN=<value>
```

Note: /RWIN must be in uppercase (capitals). Reboot the machine for the setting to take effect.

To remove the global setting and reverse out the effect of FixTCP:

```
C:\FixTCP /REMOVE
```

Note: /REMOVE must be in uppercase (capitals). Reboot the machine for the setting to take effect.

Important Notice

Making changes in the Registry can cause serious problems, which in some cases can result in the need to reinstall Windows.

It is recommended:
- FixTCP is used only by experienced computer support personnel who are familiar with Registry editing.
- Test it on an example configuration before rolling out to user machines.
- Check for presence of the global TCPWindowSize key and its value before making changes
- Back up the registry before making changes

Effect of setting TCPWindowSize Globally

The global setting will apply to all network interfaces in the system, for example Ethernet port, Wireless LAN. These connections may experience impacts upon performance when using these network interfaces. A larger TCPWindowSize is sometimes specified for working with ADSL broadband networks.

If there is a negative effect upon another network connection, it is recommended that the setting is removed.

History

This document – Version	FixTCP.exe Date	Notes
R1A, 2004-03-08	2004-01-19	
R1B, 2004-05-20	2004-04-12	Add /REMOVE
R1C, 2004-06-08	2004-04-12	Add note that /RWIN and /REMOVE must be in uppercase.