GSM (Windows) Client-Server Reconnection Notes

1. Introduction

This note attempts to clear up some misunderstandings with the GSM (Windows) Global-Client/Global-Server re-connection options.

2. The AllowClientReconnection Option

Each Global Server maintains a list of the various Global Clients that are connected to it. This list is maintained, on a per-server basis, to prevent multiple copies of a particular Global Client from connecting to the Global Server. The "Client Connection Table" within the Global Server is only checked and maintained when a network request is received from a Global Client (i.e. it is considered as part of the GSM (Windows) equivalent of the BOS/LAN network handling).

The Client Connection Table is essential to prevent multiple Global Clients with the same node-id from connecting to a Global Server. If multiple Global Clients with the same node-id **are** connected to a Global Server, severe data corruption can occur if more than one client attempts to write to a file that resides on that server.

The first released version of GSM (Windows) (i.e. GLOBAL.EXE V2.1) displayed a mild error Dialogue Box if an attempt was made to connect a second, or subsequent, Global Client to a particular Global Server. On some V2.1 installations this error message was ignored by end-users, allowing multiple Global Clients with the same node-id to be connected to a Global Server.

A re-release of GSM (Windows) closed this loop-hole to display a fatal error message when a multiple client connection is detected:

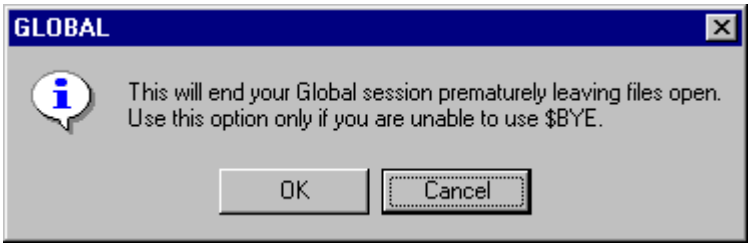
When the user selects the "OK" button the Global Client continues but the network connection between the client and the Global Server is marked as irrecoverably "Not Connected". This Not Connected condition is reflected as a NETWORK ERROR when the Global Client attempts to access the Global Server. If the Global Server contains the Master

SYSRES (i.e. normally, if the Global Server is "A") this will result in the standard GSM error message:

$57 MASTER COMPUTER UNAVAILABLE
$57 KEY UNIT OF SYSRES ON NEW MASTER COMPUTER:

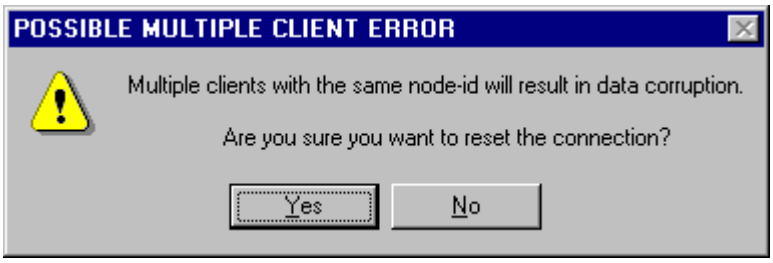
Unless a second SYSRES is available on the network (e.g. unless a local SYSRES has been installed) the Global Client will **NEVER** be able to connect to the Master Server; and there will be no way to recover from this error message. Thus, the Global Client will have to be closed down by clicking on the Close box on the right-hand side of the main caption bar. If the ForbidClose option (see ref. A.1) is enabled (i.e. set to "On" etc.) the following error Dialogue Box will appear and it will **NOT** be possible to close down the Global Client:

If the ForbidClose option (see ref. A.1) is disabled (i.e. set to "Off" etc.) then it will be possible to close down the Global Client to partially recover the situation:



Note that the enabled ForbidClose option can be overridden by removing the tick from the "Forbid close" option in the "Administrator options" menu from the main "Options" drop-down menu.

The "AllowClientReconnection" option (see ref. A.2) was introduced to allow a connection between a Global Client and a Global Server to be reset to prevent the irrecoverably "Not Connected" condition. When AllowClientReconnection is enabled the single FATAL CONNECTION ERROR dialogue box is replaced by the following 2 dialogue boxes:

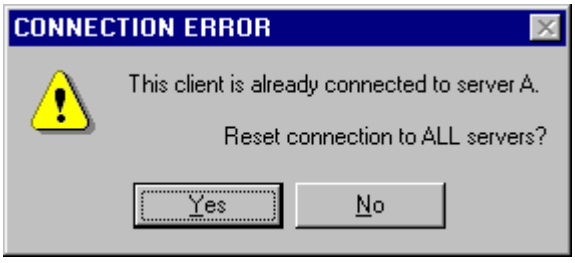


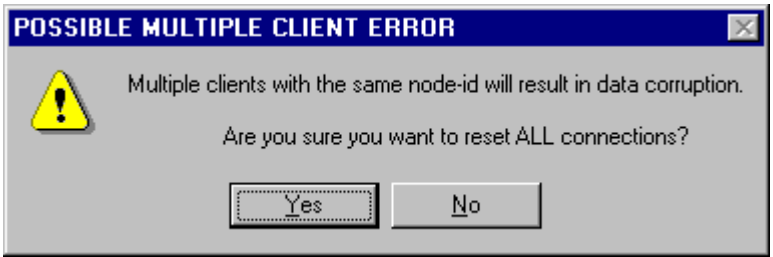
If the operator selects the "Yes" button on both of these dialogue boxes, the connection between the Global Client and the Global Server is re-established and the network connection will operate normally. **IMPORTANT NOTE: RE-ENABLING A NETWORK CONNECTION MAY CAUSE INCONSISTENT INFORMATION IN THE FILE CONTROL BLOCKS WITHIN THE GLOBAL SERVER. YOU SHOULD RUN $BYE IMMEDIATELY AFTER RE-CONNECTING A GLOBAL CLIENT TO ENSURE A CLEAN DISCONNECTION.**

3. The AllowClientReconnectionAllServers Option

The AllowClientReconnection option described in section 2 only re-establishes the connection between a Global Client and a **single** Global Server (i.e. the particular Global Server that was being accessed when the failed connection was detected). The first Global Server that reports the failed connection is normally the "Master Server" (i.e. normally "A"). If the restarted Global Client was connected to several Global Servers, the CONNECTION ERROR dialogue box will appear as each Global Server is accessed (actually it will appear for every Global Server that had been accessed by the previous invocation of the Global Client).

Because repeatedly replying "Yes" to several CONNECTION ERROR dialogue boxes can be tedious, the AllowClientReconnectionAllServers (ref. A.3) has been implemented to allow a single "Dialogue Box pair" to control the reconnection to **all** potential Global Servers:



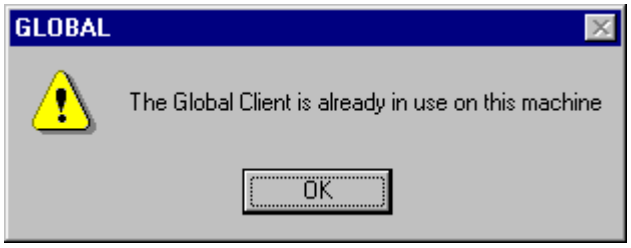


4. The SingleInstance Option

The AllowClientReconnection and AllowClientReconnectionAllServers options merely allow "in use" entries in the Client Connection Table for a single Global Server, or all Global Servers, to be optionally cleared. Failing to clear an "in use" entry in a Client Connection Table will result in an irrecoverably NETWORK ERROR. Merely, disabling the AllowClientReconnection option by itself should **NOT** be used to prevent a naïve operator from attempting to run multiple copies of a Global Client on a single PC. Although disabling the AllowClientReconnection option is recommended (to prevent the file corruption that can occur if multiple Global Clients with identical node-id's are connected to a Global Server), the NETWORK ERRORS that occur as a result of the failed connections can cause the operator further confusion.

Thus, disabling the AllowClientReconnection option is not sufficient. **Disabling the SingleInstance option (ref. A.4) is the recommended technique to prevent a naïve operator from attempting to run multiple copies of a Global Client on a single PC**. The SingleInstance option is tested as soon as the Global Client is initiated and is not triggered when the Global Client attempts to access a Global Server.

If the SingleInstance option is enabled the following dialogue box will be displayed if a second invocation of the Global Client is attempted:



Clicking on the "OK" button closes the Global Client immediately.

The Symmetric Multiple Client (SMC) option has been implemented in such a way that the SingleInstance option only prevents multiple invocations of a Global Client with **identical** node-id's. For example, running a Global Client configured as node-id 0x1B (i.e. using the /EN=27 command line option) does **not** prevent another Global Client, configured as node-id 0x1C (i.e. using the /EN=28 command line option), from running. Whereas, a Global Client configured as node-id 0x1B **does** prevent another Global Client, also configured as node-id 0x1B from running.

Appendix A References to the various Registry Settings

This appendix describes the location of the registry settings described above (see GLMACH.DOC, *when available,* for full details).

A.1 ForbidClose

This option is in the following registry key:

..\Global\Client\Screens\GUI\Miscellaneous

A.2 AllowClientReconnection

This option is in the following registry key:

..\Global\Client

A.3 AllowClientReconnectionAllServers

This option is in the following registry key:

..\Global\Client

A.4 SingleInstance

This option is in the following registry key:

..\Global\Client\Screens\GUI\Miscellaneous