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# Introducing Windows Client Server for T3 E3 Analysis

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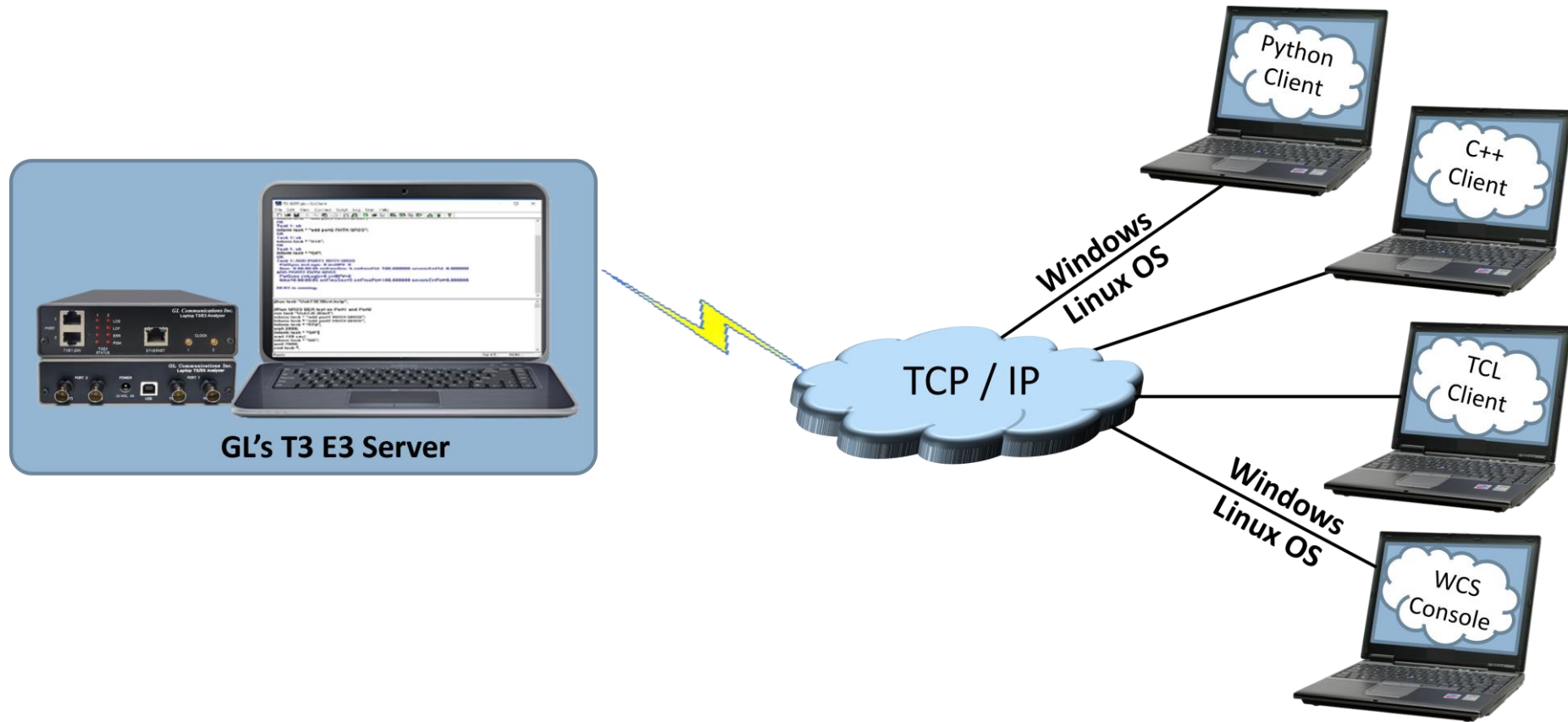
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# Scripting and Automation

## Windows Client Server for Laptop T3 (DS3)/E3 Analyzers



- GL's Windows Client/Server software is a non-GUI based program for remote, scripted, and automated control of T3 E3 configuration, capture, transmission and more

# Features

- Intrusive/Non-Intrusive T3 E3 Testing
- Performance monitoring and testing of multiple site locations from a single client
- Shared use of T3 E3 test equipment from multiple client locations
- Simultaneous testing of high capacity T3 E3 systems through a single client
- Integration of T3 E3 testing into more complex testing systems
- Capability of remote operation, automation, and multi-site connectivity
- Wild card and sequential operators available in the command syntax, allows to configure and control multiple elements of the test set using a fewer lines of commands
- Custom TCP/IP clients could be developed in any programming language to seamlessly integrate into existing testing program

# Server Initialization

- Specifies which TCP/IP port should be used to listen for incoming connection requests from clients, as well as the messaging options (ASCII or binary, version 3 or 4)



The image shows a Windows-style dialog box titled "Start GL Server". It contains several configuration options for starting the server. The "Listen Port" section has a text box with "17090" and a dropdown menu set to "<Default>". There is a "Restore Default" button below the dropdown. To the right of these are "Start GL Server" and "Exit" buttons. Below the "Listen Port" section is a checkbox for "Server is Invisible". The "Messaging" section has two radio buttons: "Send / Receive Binary Messages" (selected) and "Send / Receive ASCII Messages". The "Version" section has two radio buttons: "Send / Receive Version 3 Messages" and "Send / Receive Version 4 Messages" (selected). At the bottom, there are two checkboxes: "Use These Settings until Further Notice" and "Start Server Automatically At Analyzer Start-Up".

Start GL Server

Listen Port

17090

<Default>

Restore Default

Start GL Server

Exit

☐ Server is Invisible

Messaging

☒ Send / Receive Binary Messages

☐ Send / Receive ASCII Messages

Version

☐ Send / Receive Version 3 Messages

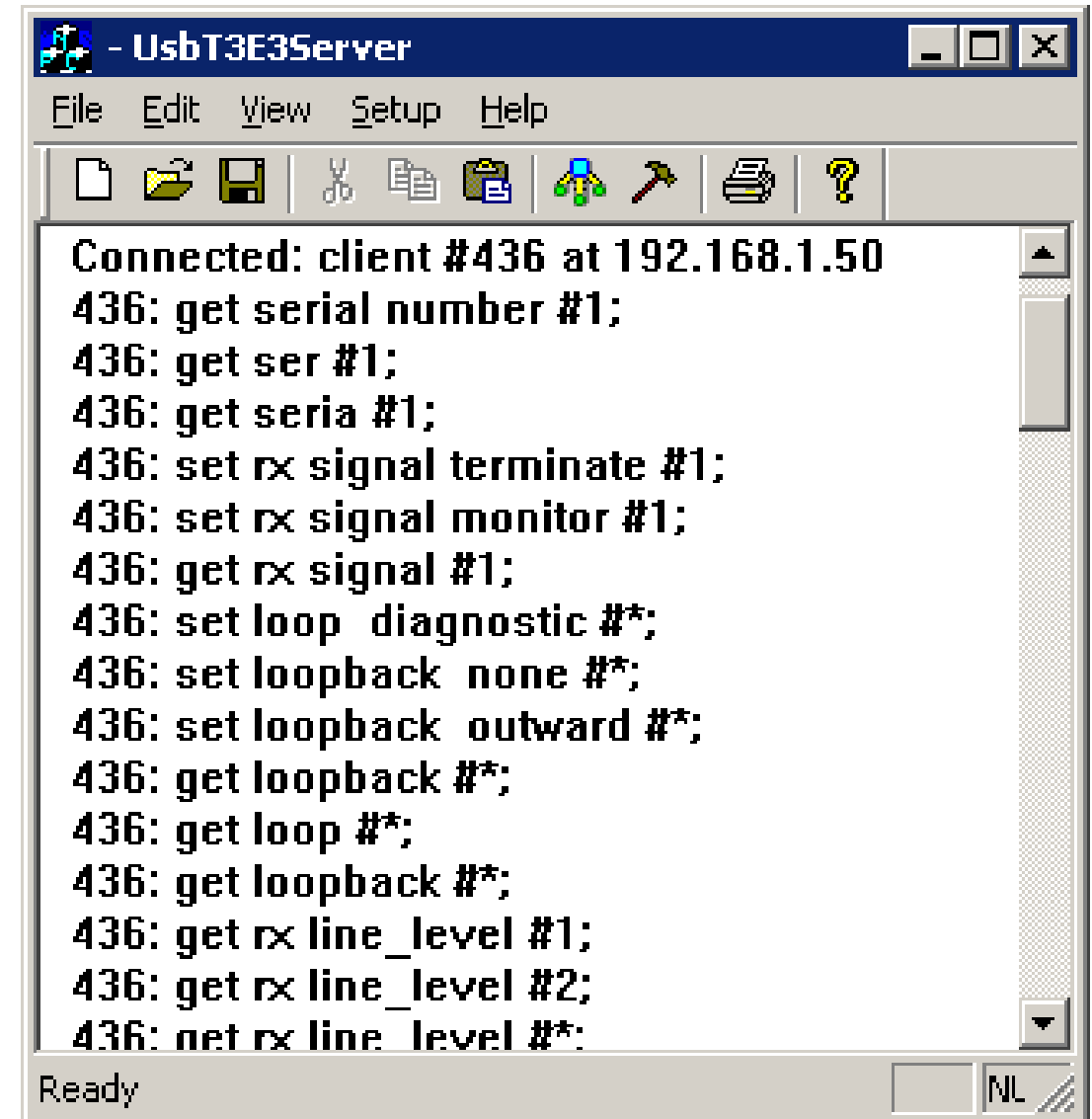
☒ Send / Receive Version 4 Messages

☐ Use These Settings until Further Notice

☐ Start Server Automatically At Analyzer Start-Up

# Server Interface

- The display area in server is read-only, and normally shows a record of transactions of various types



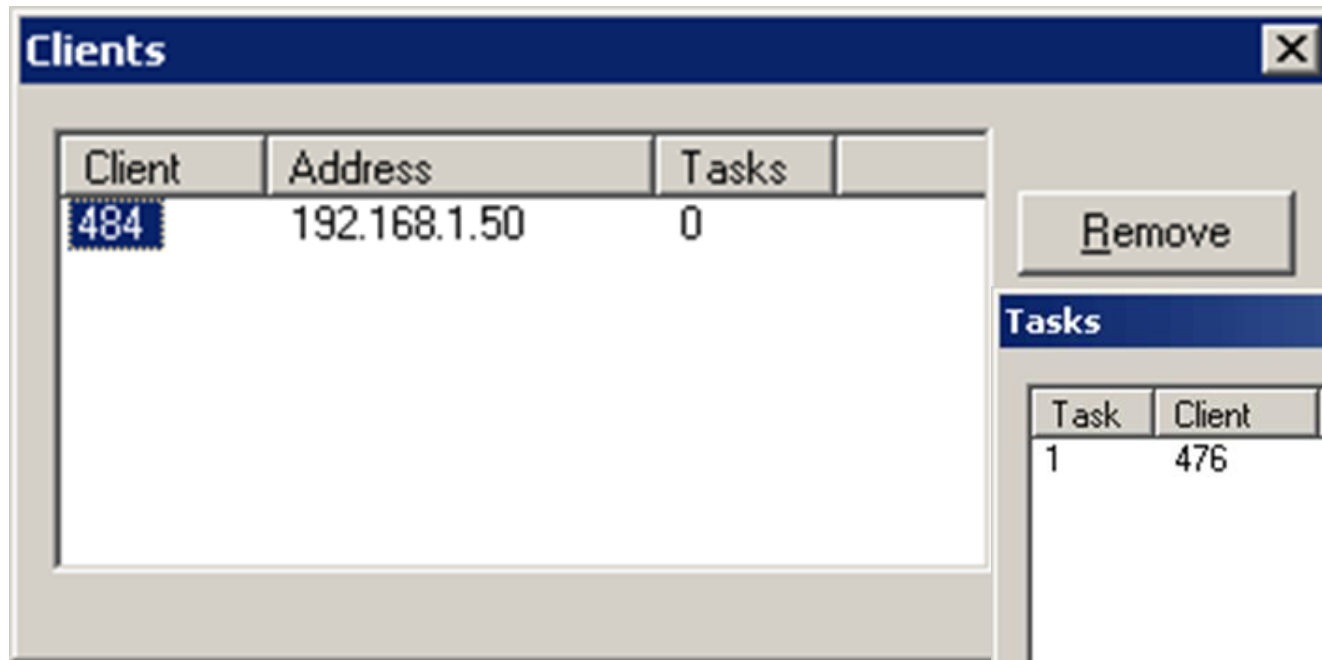
# Server Functions

- The server performs 'actions' and 'tasks'
- An 'action' is in response to a 'command' initiated by a client. The server performs the action immediately and notifies the client of the result
- A 'task' involves real time generation and processing of data. Multiple tasks can be initiated without completion of previous tasks
- The server informs the client on tasks: started, status, complete, and so on
- Typical actions are - Get Software version, Rx Signal Settings, Loopback Settings, Alarm Monitoring, Tx Rx Framing Formats, Clock Source Settings, Mode Selection, Insert Errors and Get Error Counts, FEAC messages, Line Level and Signal Frequency and others

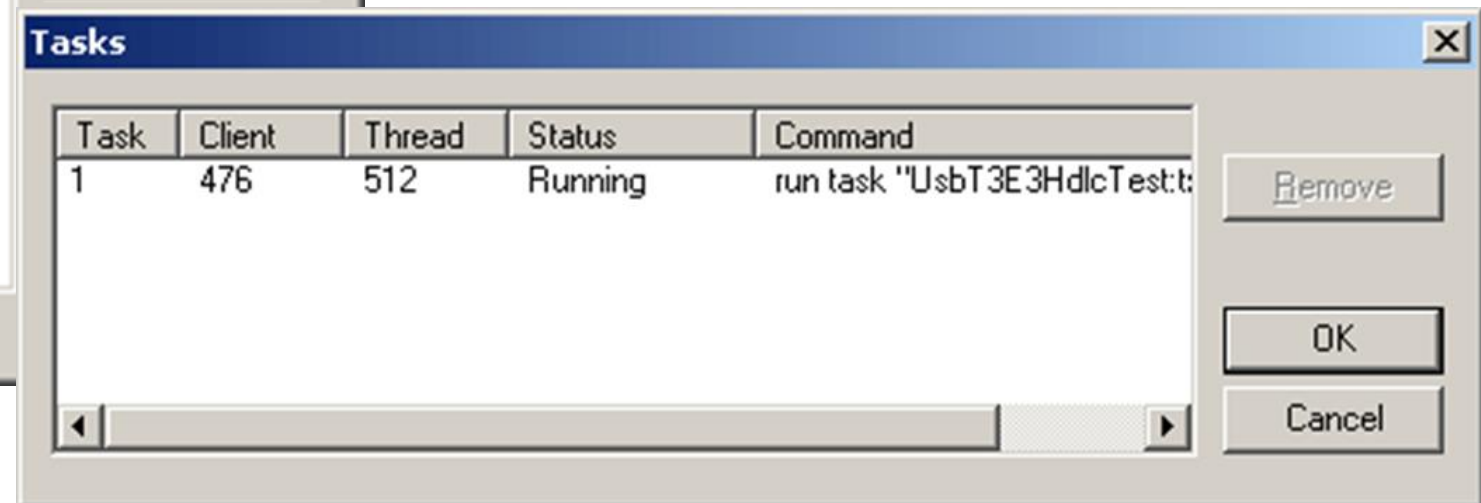
# Client and Task Administration

- Client Administration allows to obtain the list of currently connected clients
- Server Task Administration allows to obtain the list of current tasks being executed on the task list

## Client Administration

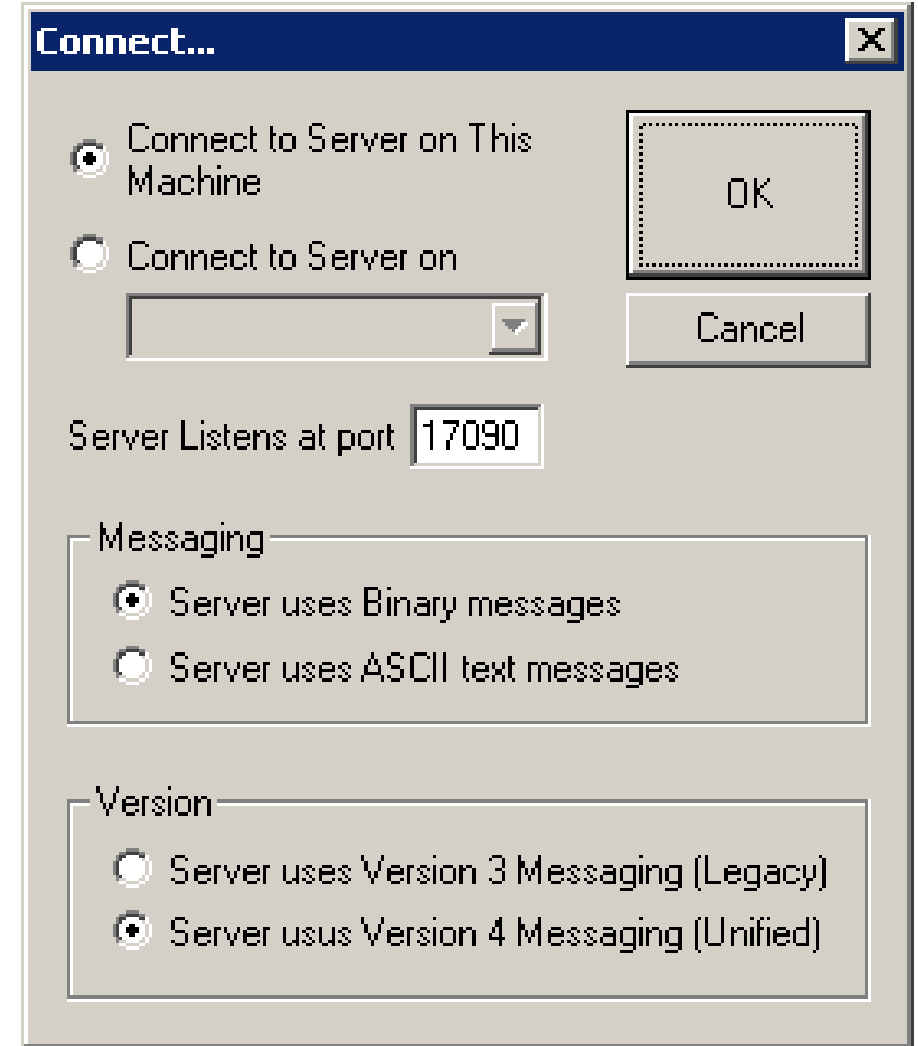


## Server Task Administration



# Client Connection

- Client connects and disconnects from servers, load and save batches of commands, and manage its log file through simple user controls
- Client software accepts text interactively from the user or from a previously saved file and forwards the text, line by line to the server
- Accepts notification messages from the server and displays the text field of the message



A screenshot of a 'Connect...' dialog box. The dialog has a title bar with 'Connect...' and a close button. It contains two radio buttons: 'Connect to Server on This Machine' (selected) and 'Connect to Server on' (unselected). Below the second radio button is a text input field with a dropdown arrow. To the right of these are 'OK' and 'Cancel' buttons. Below the input field is a text field labeled 'Server Listens at port' with the value '17090'. There are two grouped sections: 'Messaging' with 'Server uses Binary messages' (selected) and 'Server uses ASCII text messages' (unselected); and 'Version' with 'Server uses Version 3 Messaging (Legacy)' (unselected) and 'Server uses Version 4 Messaging (Unified)' (selected).

Connect...

☒ Connect to Server on This Machine

☐ Connect to Server on

Server Listens at port 17090

Messaging

☒ Server uses Binary messages

☐ Server uses ASCII text messages

Version

☐ Server uses Version 3 Messaging (Legacy)

☒ Server uses Version 4 Messaging (Unified)

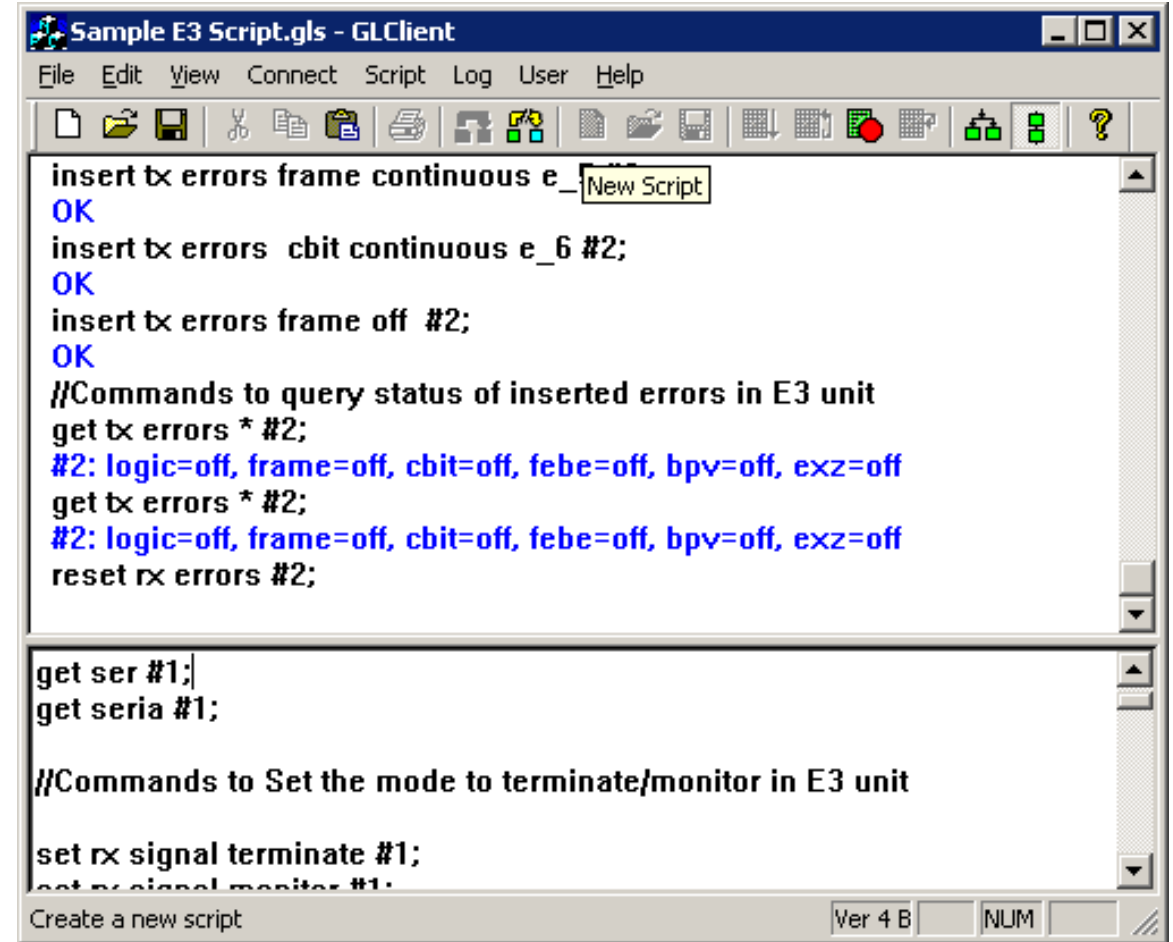
OK

Cancel



# Client Interface

- T3 E3 Client is a Windows-based application (GLClient.exe) that is distributed freely along with T3 E3 Server. The T3 E3 unit in server mode can be easily controlled through several software clients at remote or local sites
- The workspace may be used to interactively enter and edit commands. The log area is a read-only that displays connects and disconnects, commands, and notifications in this window



# Client Functions

- Compatible with Windows® 10 and above operating system
- All commands are simple and self-explanatory
- Commands can be customized to implement interactive menu options to set Tx Rx Framing Formats, Clock Source, getting FEAC messages, Line level, signal frequency and so on
- Values returned from the server can be easily accessed and stored as user-defined variables
- Streamlines both the source script and the output by executing only the messages that user requests
- Multiple clients can access a single server simultaneously

# WCS Modules

- WCS module XX610 - File transmission and reception
- WCS module XX634 - Multi-Channel HDLC Emulation and Analysis and File based High Throughput HDLC Record/Playback
- WCS module XX635 – PPP Emulation and Analysis
- WCS module XX610 - File transmission and reception
- Tx/Rx Files on unframed unchannelized T3 E3 (UsbT3E3FileXmit) is a WCS Server side module that:
  - Transmits data read from files
  - Receives data to files
  - Capability of remote operation, automation, and multi-site connectivity
- Example:
  - run task "UsbT3E3FileXmit" using "QEND";
  - inform task \* "tx #1 'c:\seqhdl.dat' LIMIT 200000";
  - inform task \* "start";
- The above example transmits 200000 bytes from file 'c:\seqhdl.dat' and then stops

# WCS Modules (Contd.)

## WCS module XX634 - Multi-Channel HDLC Emulation and Analysis and File based High Throughput HDLC Record/Playback

USB T3 E3 HDLC Tx/Rx Test (UsbT3E3HdlcTest) is a WCS Server side module that:

- Sends HDLC frames with or without impairments
- Receives and verifies HDLC frames and optionally logs the errors
- Capability of remote operation, automation, and multi-site connectivity

### Example:

```
run task "UsbT3E3HdlcTest:tx" using "QEND";  
inform task * "#1..3 FRAMES 100";  
inform task * "start";
```

Transmit 100 frames on each of three streams ports 1 through 3

# WCS Modules (Contd.)

## WCS module XX635– PPP Emulation and Analysis

The PPP Tx/Rx Test is an optional WCS Server side module that:

- Sends PPP frames with or without impairments
- Receives PPP frames and logs the events
- Generated and received PPP traffic on each individual PPP link using source type
  - Sequence numbers
  - Hex string frame
  - Binary flat files
  - GL HDL trace files
  - Network traffic (Routing and Bridging)
- Also, impairments can be applied on individual PPP links
  - Frame duplication
  - CRC Error
  - Frame Error
  - Logical Error (AND, OR, and XOR)
- Capability of remote operation, automation, and multi-site connectivity

# Sample Scripts

## **//Commands to set and get FEAC messaging**

set tx feac 0x1D cont #1;

get tx feac #2;

## **//Command transmit 100 frames on each card.**

run task "UsbT3E3HdlcTest:tx" using "QEND";

inform task 1 "#1..2 FRAMES 100";

inform task 1 "start";

## **//Commands to insert same Errors on both the cards**

run task "UsbT3E3HdlcTest:tx";

inform task 1 "#1,2 SEQNUM FIXLEN 8 FRAMES 1200000 FLAGS 200";

inform task 1 "error rep 1000 skip 9 offs 3 xor f5";

inform task 1 "start";

# Sample Scripts (Contd.)

## **//Command for receive function operation**

```
run task "UsbT3E3HdlcTest:rx" using "LOG 'c:\rx.log";  
inform task 1 "#2 FRAMES 1000 SEQNUM MSB2 ";  
inform task 1 "start";
```

## **//Command to playback file**

```
run task "UsbT3E3FileXmit" using "QEND";  
inform task 1 "tx #1 'c:\usb_t3e3.bit' EOF";  
inform task 1 "start";
```

## **//Command to record a limited number of frames**

```
run task "UsbT3E3FileXmit" using "QEND";  
inform task 2 "rx #2 'c:\rxdat' LIMIT 1000000";  
inform task 2 "start";
```

Thank you