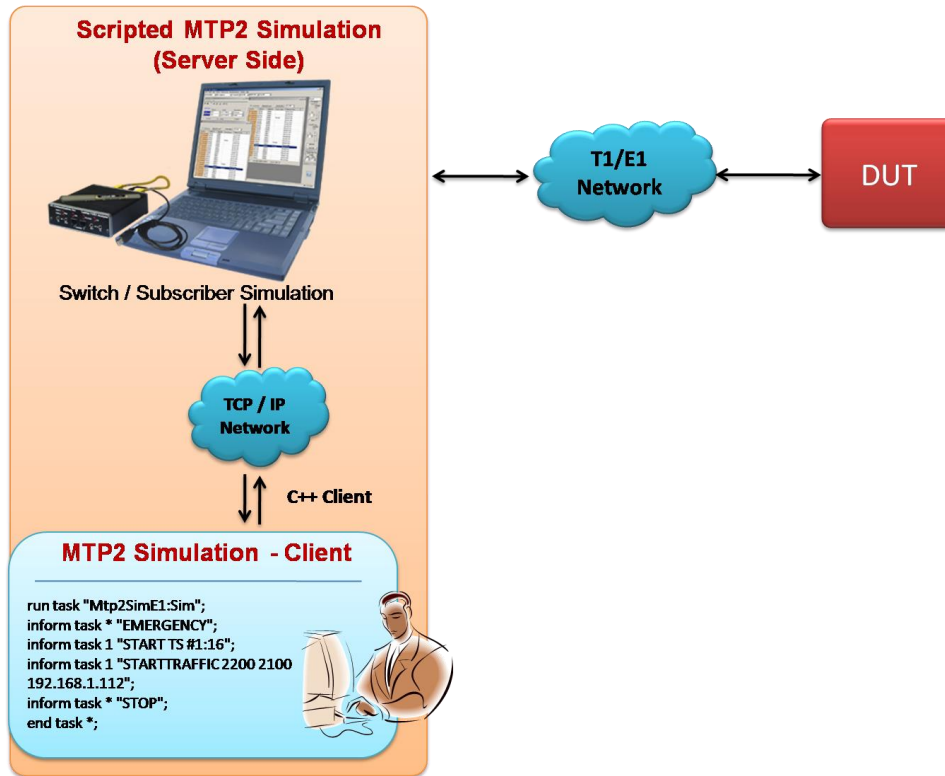


Windows Client Server MTP2 Simulator

(Scripted MTP2 Simulation)



Overview

MTP2 (Message Transfer Part Level 2) protocol operates on layer 2 of OSI. In SS7 network, it is responsible for the reliable transmission of higher layer signal messages over an individual Signaling Link.

GL's **MTP2 Simulator** reads higher layer signal messages such as ISUP, and transmits over T1/E1 line. It can be used to simulate MTP2 of the SS7 stack. MTP2 is in compliance according to ANSI, ETSI, and ITU standards.

The Windows Client-Server application of T1/E1 Analyzer includes MTP2 simulator module (Mtp2Sim.dll). It can act as a peer end to test an SS7 stack.

For more information, please visit [WCS MTP2 Simulator](http://www.gl.com/WCS_MTP2_Simulator) webpage.

Main Features

- Simulate MTP2 Data Link layer
- Displays MTP2 link status events.
- Normal and Emergency time alignment is supported.
- Sends LSSUs, FISU and MSU signal units.
- MTP2 commands can be sent from a remote client (C++/TCL).
- Point codes can be configured manually.
- Supports synchronous or asynchronous transmission of user defined data as ISUP information.
- ITU / ANSI / ETSI standards are supported.
- Supported Hardware platforms—Octal/Quad T1/E1 Boards, USB based tProbe™ units, Portable USB based T1/E1 units, and Universal HD T1/E1 Cards.
- Operating systems supported – Windows 8.1 or higher

 **GL Communications Inc.**

818 West Diamond Avenue - Third Floor, Gaithersburg, MD 20878, U.S.A

(Web) www.gl.com - (V) +1-301-670-4784 (F) +1-301-670-9187 - (E-Mail) info@gl.com

GL Server and Client Functions

The **Windows Client-Server** application of T1/E1 Analyzer includes MTP2 simulator module (Mtp2Sim.dll). It can act as a peer end to test an SS7 stack. WCS Client applications use simple commands to invoke MTP2 simulator module on server. Once the MTP2 simulator module is initialized, a task number will be assigned and the client can use further commands to perform additional tasks.

"Actions" are performed immediately in response to the "commands" from the clients. The Server informs the Client on tasks: started, status, complete. Typical tasks include traffic/protocol frames playback and recording, and more.

Client programs communicate with the GL Server via TCP/IP-encapsulated commands and responses. Clients are compatible with any OS, including UNIX, Linux and Windows. Other environments commonly used for client development include Perl, MatLab, Visual Basic, and LabView.

WCS Module XX643 - Transmit & Receive MTP2 Frames

The script transmits and receives MTP2 frames on E1 signaling timeslot over a specified UDP port and IP address.

Sample script for Transmit/ Receive traffic:

```
run task "Mtp2SimE1:Sim"; //defines task for MTP2 simulation
inform task * "EMERGENCY"; //defines alignment mode as emergency
inform task 1 "START TS #1:16"; //defines signaling timeslot
inform task 1 "STARTTRAFFIC 2200 2100 192.168.1.112";
//defines UDP ports and IP address for transmitting and receiving MTP2 frames
inform task * "STOP"; //command to stop the task
end task *; //terminates the task
```

The screenshot displays two windows. The left window, titled "mtp2.gls - GLClient", shows a script with the following content:

```
Task 2: Mtp2LinkStatus: OutOfService
Task 2: Mtp2LinkStatus: InitialAlignment
Task 1: Mtp2LinkStatus: AlignedReady
Task 2: Mtp2LinkStatus: AlignedReady
Task 2: Mtp2LinkStatus: InService
Task 1: Mtp2LinkStatus: InService
inform task 1 "STARTTRAFFIC 2200 2100 127.0.0.1";
OK
inform task 2 "STARTTRAFFIC 2100 2200 127.0.0.1";
OK
inform task 1 "SEND ABCDEFGHIJKLMNOPQRSTUVWXYZ";
OK
inform task 1 "SENDMULTIPLE SYNC 5 ABCDEFGHIJKLMNOPQRSTUVWXYZ";
OK
Task 1: Wait till 5 packets are transmitted and you receive the report
Task 1: Packets have been transmitted

run task "Mtp2SimE1:Sim";
inform task 1 "EMERGENCY";
inform task 1 "START TS #1:30";
inform task 1 "STARTTRAFFIC 2200 2100 127.0.0.1";

inform task 1 "SEND ABCDEFGHIJKLMNOPQRSTUVWXYZ";
inform task 1 "SENDMULTIPLE SYNC 5 ABCDEFGHIJKLMNOPQRSTUVWXYZ";

run task "Mtp2SimE1:Sim";
inform task 2 "EMERGENCY";
inform task 2 "START TS #2:30";
inform task 2 "STARTTRAFFIC 2100 2200 127.0.0.1";

inform task * "STOPTRAFFIC";

inform task * "STOP";
```

The right window, titled "SS7 Protocol Analysis SS7 ITU", shows a table of captured frames and their details. The table has columns: Dev, TSlot, SubCh, Frame#, TIME (Relative), Len, Enor, BSN, BIB, FSN, FIB, SLC, DPC, OPC, and SSCP Mess. The data rows are as follows:

Dev	TSlot	SubCh	Frame#	TIME (Relative)	Len	Enor	BSN	BIB	FSN	FIB	SLC	DPC	OPC	SSCP Mess
1	30		322568	00:02:12:007500	5		106	1	127	1				
2	30		322568	00:02:12:007625	...		127	1	110	1	4	0.104.2	2.162.1	
1	30		322570	00:02:12:008250	5		106	1	127	1				
1	30		322571	00:02:12:009000	5		106	1	127	1				
1	30		322572	00:02:12:009875	5		106	1	127	1				
1	30		322573	00:02:12:010625	5		106	1	127	1				
1	30		322574	00:02:12:011375	5		106	1	127	1				
2	30		322575	00:02:12:011625	...		127	1	111	1	4	0.104.2	2.162.1	
1	30		322576	00:02:12:012125	...		106	1	127	1				

Below the table, the details for Card2 TimeSlot=30 Frame=322568 at 00:02:12:007625 OK Len=31 are shown, including HDLC Frame Data + FCS and MTP2/MTP3 layer details.

Flex Dump of the Frame Data:

```
FF EE 1A 41 42 43 44 45 46 47 48 49 4A 4B 4C 4D  ABCDEFGHIJKLM
4E 4F 50 51 52 53 54 55 56 57 58 59 5A 5B 5C 5D  NOPQRSTUVWXYZ
```

Running: Utilization 26.00% UnderRuns=2 Captured 717 285 frames Errors 1 CRC, 1 Frame

Buyer's Guide

Item No	Product Description
XX643	MTP2 Simulator (requires xx600)
XX600	Windows Client Server

Item No	Related Software
XX647	MAPS™ SS7 for ISUP Conformance Scripts
XX649	MAPS™ SS7 for ISUP Simulation
XX649	MAPS™ SS7 for MAP Simulation
XX120	SS7 Analyzer Software
PKS130	MAPS™ SIGTRAN

Item No	Related Hardware
PTE001	tProbe™ Dual T1 E1 Laptop Analyzer
HTE001	Universal T1/E1 Card
UTE001	Portable USB based Dual T1/E1 Laptop Analyzer
FTE001	QuadXpress T1/E1 Main Board (Quad Port– requires additional licenses)
ETE001	OctalXpress T1/E1 Main Board plus Daughter Board (Octal Port– requires additional licenses)

For more information, please visit [Windows Client Server](#) webpage.



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