TranScan Viewer™
&
TranScan/LAN™

Version 5.8

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Preface

This document contains procedures for use of the TranScan Viewer[1] and the optional component TranScan/LAN.

TranScan Viewer will take a message formatted according to ISO/8583 standards, parse it, and display it in an easily readable format. ISO/8583 is the ISO standard for message formats for Bankcard interfaces. The major international, and many regional, ATM and POS switches, use ISO/8583.

The optional TranScan/LAN component allows for monitoring of ISO/8583 formatted messages on an Ethernet.

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1. Introduction

1.1 TranScan Viewer™

The TranScan Viewer supports input from different sources:

1. Paste the message from the clipboard.
2. "Grab" an ISO format message from a TPF console display. Access to the TPF console must be via the 3270 emulation program Extra[2]. A request is made to Extra for a copy of the screen by TranScan Viewer.
3. Read a file containing the binary image of the message. The file must contain the actual binary image of the message.
4. Read a text file containing the hexadecimal character representation of one or more messages.
5. Read a file previously saved by TranScan Viewer containing one or more messages.
6. ActiveX Automation (formerly known as OLE Automation) client[3]
7. TranScan/LAN add-on to Frontline Test System™ (FTS)[4] network analyzer.

TranScan Viewer will format the ISO messages and display them in an easily readable form.

This version of TranScan Viewer runs on Windows 2000, and Windows XP[5].

1.2 TranScan/LAN™

TranScan/LAN is an optional component that uses the TranScan Viewer. TranScan/LAN is a software package add-on to either Frontline Test Equipment's Ethertest or Serialtest, and is designed to support the monitoring and analysis of communications messages on a Bank Card local area network (LAN). TranScan/LAN provides a rich set of layered functions, addressing the needs of such varied groups as Network Technicians running Bank Card Networks, Software Developers implementing new functions for those networks and Network Certifiers ensuring the capability of Network participants.

1.2.1 TranScan/LAN as a Network Analyzer for LANs

FTS Ethertest, with the TranScan/LAN add-on, can perform a range of functions from displaying and capturing non-interpreted data on local area networks, to performing such functions as calculating network utilization and collecting network statistics. When displaying complex communications protocols, such as TCP/IP, FTS offers higher level mnemonic decoding functions. The "non-ISO" set of functions for FTS is described in detail in the FTS documentation.

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[2] Extra is a trademark of Attachmate, Inc.

[3] Includes Microsoft Excel and Access using Visual Basic for Applications

[4] Frontline Test System includes Ethertest, SerialTest, SerialSpy, and/or CommProbe.

[5] Windows 95, Windows 98, Windows NT, Windows 2000 and Windows XP are trademarks of Microsoft Corporation.

This manual will provide more detail on those functions pertaining to the higher level analysis of communications messages. Originally, TranScan™ was designed to parse and display various dialects of the ISO/8583 Message Format for BankCard Processors on wide area networks, WANs (using Bisync, X.25, Frame Relay, and SNA). The ISO/8583 standard has had a number of different transmission implementations, which are referred to as dialects by TranScan. TranScan has added support for many of these dialects to support the user base that gateway into the different Bank Card Networks. TranScan has grown in function and now handles a number of different "higher level" or application level message formats that are not ISO/8583 yet are can be specified in our table driven format. We encourage our users to send us specifications for their message formats for inclusion in their system as a new dialect. So, as on the various screens you see the word "ISO", please substitute "application message" in your mind, as the TranScan now handles much more than the ISO/8583 formats.

FTS and TranScan/LAN supports over 60 different Ethernet and WAN protocols. Currently, the application messages are extracted and parsed (according to the individual networks ISO/8583 format) for TCP and SNA LU0 and LU2. Contact Ontrac for any needs concerning additional protocols.

1.2.2 Operational Principles

As you use TranScan/LAN and TranScan Viewer, please remember the following general operational principles:

- There are two forms of capturing data to file for later analysis. An FTS (Ethertest) capture file, and a TranScan Viewer ISO message file. For details on the FTS dump file, see the FTS documentation. Description of the ISO message file is contained later in this document.
- Ethertest capture files, when viewed with TranScan/LAN add-on, will display parsed protocol information and application message data.
- ISO message files can then be viewed and printed with the TranScan Viewer™. ISO files, when viewed, will display only the application message, without the accompanying protocol.
- LANs, by design, are shared by many computers. There may be a huge amount of traffic between computers in which you are not interested. The simplest way to limit the traffic to that in which you are interested, is to use FTS filters. Especially helpful is the address filter. Later, this manual will discuss the address filter.

2. System Configuration and Software Installation

When you receive your system, if you have also purchased the TranScan/LAN add-on, you will also have received installation instructions for Frontline Test System (FTS). Please contact Ontrac for support (support@transcan.com) for problems with installation of the FTS or TranScan Viewer product.

During the install process for TranScan/LAN; you will have selected which hard drive and which starting sub-directory to use when the system is installed. The defaults are "C:" for the hard drive, and directory "\Program Files\TranScan Viewer". In this manual, we will refer to those defaults, so please mentally substitute your choices if you did not use the defaults.

2.1 System Requirements

Minimum system requirements

- Windows 98, Windows NT 4.0, Windows 2000, or Windows XP.
- Pentium class 300mega-hz or greater CPU (recommend 1.5ghz for monitor LAN networks with heavy traffic)
- 256 megabytes of memory CPU (recommend 1GB for monitor LAN networks with heavy traffic)
- 10 megabytes of disk drive space
- For the optional FTS and the TranScan/LAN add-on, an Ethernet card supported by Windows 98, Windows NT 4.0, Windows 2000, or Windows XP. The interface must support promiscuous mode (also known as "catch all" or CAF, capture all frames).

2.2 Installation for TranScan/LAN™ add-on to FTS™

If you have purchased the optional TranScan/LAN add-on to Frontline Test System (FTS), install the following components in the order specified below:

1. FTS software
2. TranScan/LAN add-on and TranScan Viewer

2.2.1 Frontline Test System™ Installation

Installation of FTS can include one or more of the following components: Ethertest, SerialTest, SerialSpy, CommProbe. To install FTS, execute the FTS installation program (webinstallnn.nn.nn.nn.exe, where nn.nn.nn.nn represents the latest version of FTS). For Ethertest, under "General Purpose Analyzers", select "Install Ethertest" or the appropriate program as directed by Ontrac. Click the "Go" button. When prompted, enter your FTS serial number. After installation, run FTS to verify that installation was successful. Test that the installation was successful by starting FTS and monitoring network traffic.

2.2.2 Installation of TranScan/LAN Add-on Hooks for FTS

There are TranScan/LAN Add-on "hooks" for FTS software which are to be extracted into the FTS program directory. The files are contained in an installation file "FileSetTS_yyyymmdd.exe".

Execute FileSetTS_yyyymmdd.exe and follow the on-screen instructions.

2.2.3 FTS Configuration

Options to consider setting for FTS include buffer wrapping and whether FTS is to start capturing live data when it is started. From the FTS Control Menu, select "Options", then "System Settings…"

- "Wrap Buffer" option: When enabled, FTS will wrap the buffer when it becomes full. The oldest data will be moved out of the buffer to make room for new data. Any data moved out of the buffer will be lost. This option also applies to capture files. When disabled, FTS will pause capture when the buffer becomes full. Either reset the buffer or close your capture file to continue.
- "Start up…" option: Start up options determine whether to start data capture immediately (to buffer and optionally to file) on starting FTS.

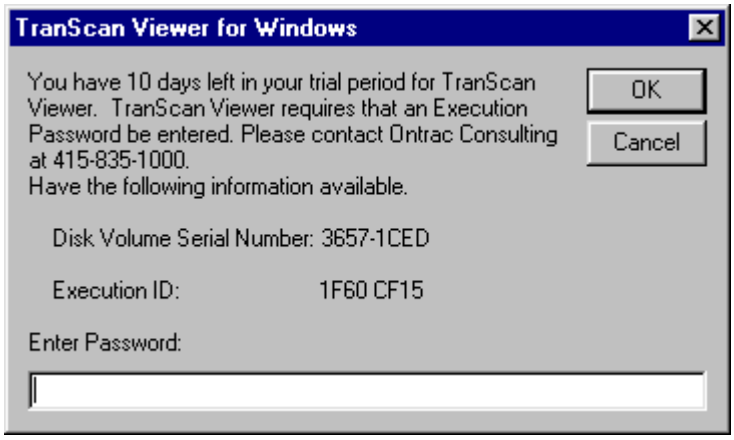
2.3 Installation of TranScan Viewer™

To install TranScan Viewer,

1. unzip the installation files into a temporary folder
2. execute "setup.exe"
3. follow the setup program directions on the program.

The installation will add "TranScan Viewer" to the Windows Start menu, under "Programs", then "TranScan".

Each copy of TranScan Viewer requires an execution ID beyond the trial period. For each license, you are given a grace period between the time the software is installed, and the time an execution ID must be entered. Contact Ontrac Consulting via e-mail at support@transcan.com or by phone at 530-277-1565, after the installation, to receive your execution ID specific to the installed copy of TranScan Viewer. You will need to provide the Disk Volume Serial Number and the Execution ID, which appears when you first start TranScan Viewer:



You may continue to use TranScan Viewer without a password, until the trail period is over. Just click the "Cancel" button. Once the password is entered, the above dialog box will no longer appear.

3. Starting the Programs

To start TranScan Viewer:

- From Windows "Start", select "Program", then "TranScan", then "TranScan Viewer" If messages are to be retrieved from a host, Extra may be started prior to, or after starting the TranScan Viewer.

To start FTS:

- From Windows "Start", select "Program", then select one of the following: "Ethertest", "CommProbe", "Serialtest", or "SerialSpy".

4. Retrieving a Message for Formatted Display

This section describes how to retrieve an ISO message from FTS Ethertest, a file, clipboard, TPF console or other host console, and display a formatted output of the message.

4.1 Grab the Message from a Host Console

For a message displayed on a host console, first, display the ISO message on the host console. TranScan Viewer supports the following TPF console displays:

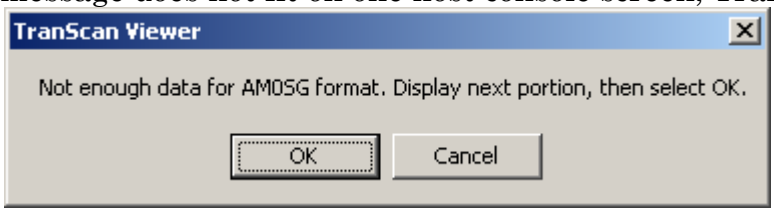
- ZUODF LEV Dn (display of dump)
- ZUODF SNAP /tag_name (display of SNAPC)
- ZKTRP DATA TRAP=mm SLOT=nn (Online Trap data display)
- ZDLEV Dn (SST level display)

The output of the display must not wrap on the screen. The best way to insure this is to clear the screen before entering the host command to display the message.

Next, switch over to the TranScan Viewer and either

- click on the button "Grab Message from Host". 
- or from the Edit menu, select “Grab Msg from Host Console”

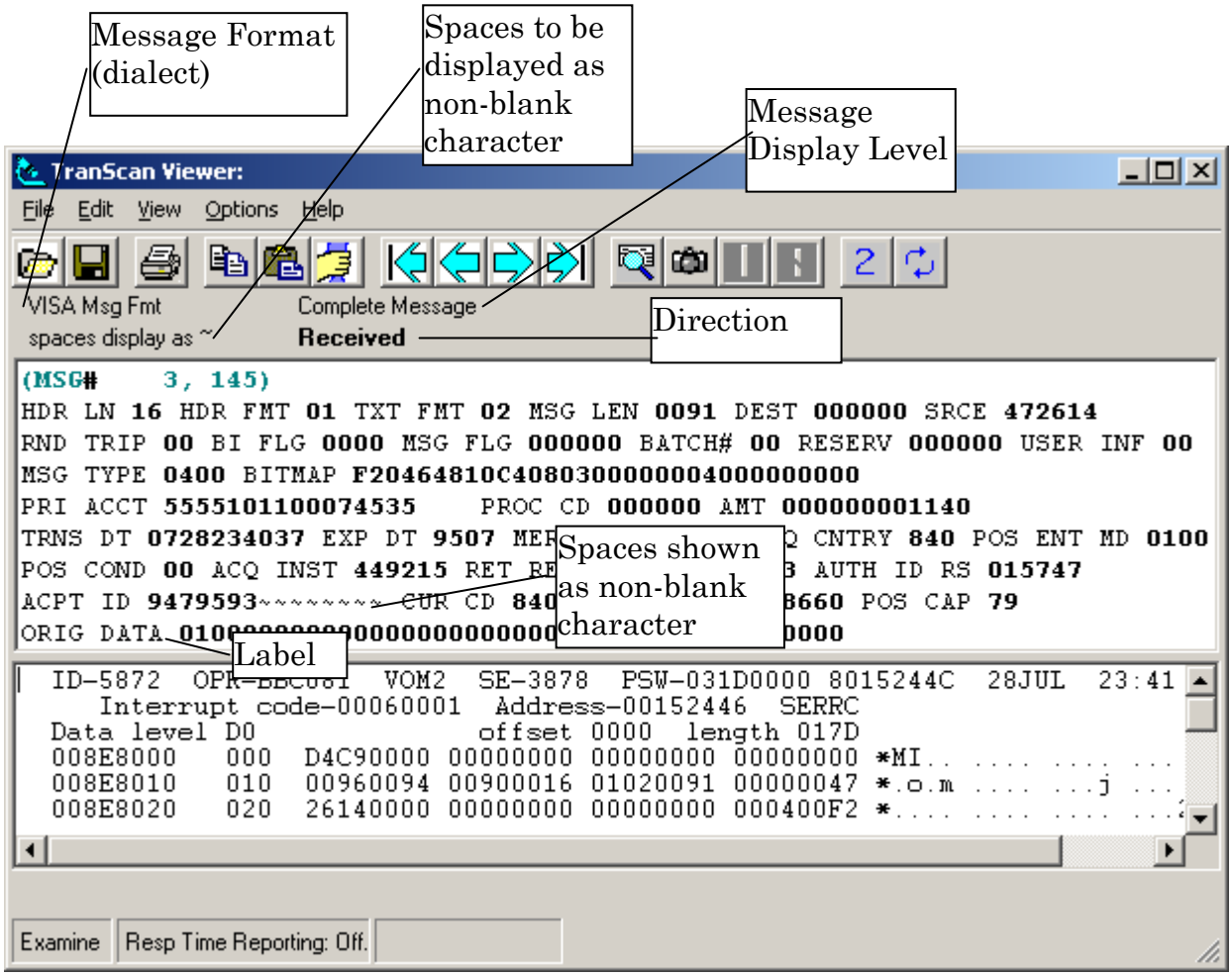
If the entire message does not fit on one host console screen, TranScan Viewer will display:



To grab the rest of the message:

1. Switch to Extra and the host console screen.
2. Display the remainder of the output from the host command.
3. Switch back to TranScan Viewer.
4. Click “OK”

TranScan Viewer will put the raw screen display in the lower text box, and the parsed, formatted message in the upper text box.



4.2 Paste Message from the Clipboard

TranScan Viewer can "paste" an ISO 8583 message from the clipboard. The clipboard must contain ASCII character text. The message in the clipboard may be formatted in:

- one of the host console formats supported by TranScan Viewer,
- hexadecimal character text representation of a message[6], or
- the message itself, if the message encoding only uses ASCII.

To tell TranScan Viewer, which of the above to use during paste from the clipboard:

1. from the Options menu, select "Clipboard contains:"
2. then select the desired clipboard option

To paste from the clipboard, from the Edit menu, select "Paste msg from clipboard", or use the "Paste Message from Clipboard" button on the toolbar.

To see an example, copy the following message into the clipboard.

30323030 0000000000010000 303531 496620796F752063616E
207265616420 74686973 2C2074686520
6D65737361676520 706172736564206F72726563746C792E

In TranScan Viewer,

1. set the "dialect" (from the "View" menu) to "ASCII/1993" with "Header Bytes to Skip" set to 0,
2. set the clipboard paste option to "Hex Character Representation of Msg"
3. then "paste" from the clipboard.

4.3 Retrieve a Message in a Binary File

TranScan Viewer has the capability to read a binary file containing the exact binary image of a message. No added spaces, carriage returns, or line feeds. No character code conversion (i.e. EBDCIC to ASCII). TranScan Viewer will show the hexadecimal character display in the lower box, and the parsed message display in the upper box.

To open a binary message file:

1. From the File menu, select "Open binary msg file…"
2. Select the file using the Open File dialog box (the default file extension is .bim).
3. Click "Open"

4.4 Retrieve a Character Message in a Text File

TranScan Viewer can read and parse a character representation of a message in a text file that was previously saved by TranScan Viewer. (See section 7, Saving Messages to File.)

1. From the File menu, select "Open character msg file…"
2. Select the file from the Open File dialog box (the default file extension is .tgs).
3. Click "Open"

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[6] For example: F0F2F0F07204…, for a message format which contains the message type (0200) in EBDCIC and the bitmap (7204…) in binary. Space, carriage return, and line feed (paragraph) characters are not considered part of the message and are skipped.

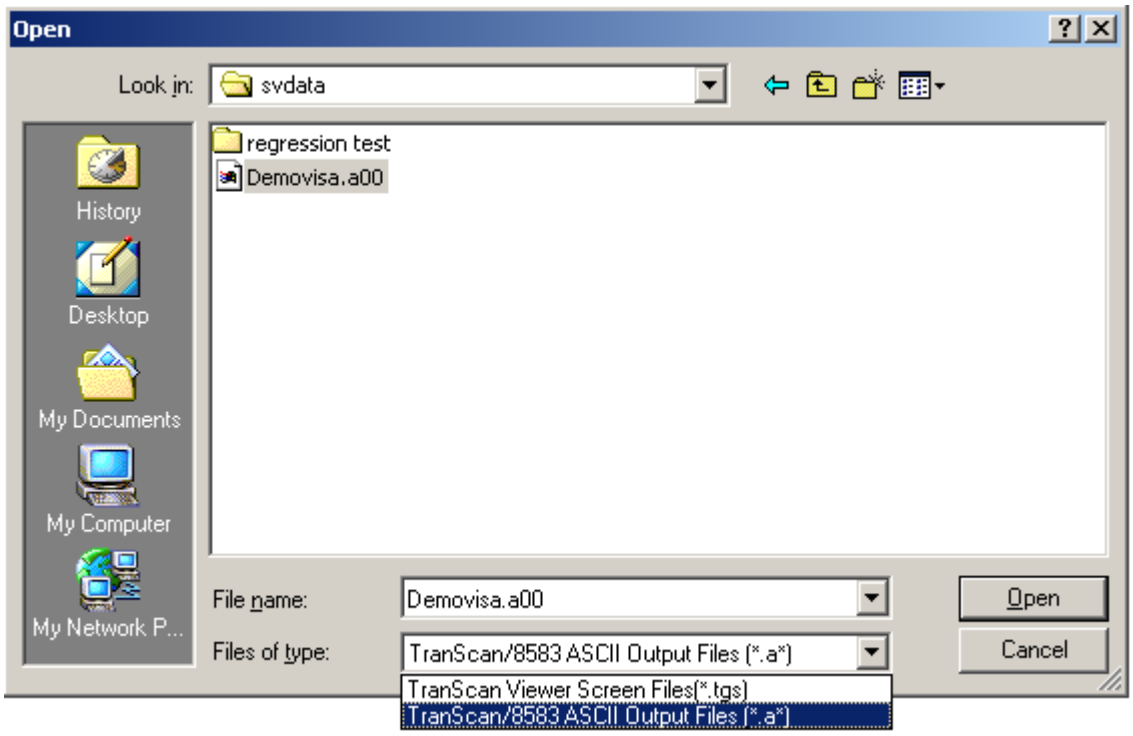
4.5 Retrieve a TranScan/8583 ASCII Output File

TranScan Viewer can read and parse a character representation of a message in a file that was created by the TranScan/8583 WAN line monitor. TranScan/8583, when displaying the parsed output of messages, has a "Print" option, that supports saving the messages to an ASCII file. TranScan/8583 uses file extension a*, where * is a two digit sequential number start at 00.

The messages in the file have to be the hexadecimal display of the messages. (Either select option "h" to view the messages in hexadecimal, or select the Hexadecimal dialect.) The TranScan Viewer will also utilize the timestamps, if they are included in the ASCII file. (In TranScan/8583, toggle the timestamp display option by pressing "w")

To have TranScan Viewer read the TranScan/8583 ASCII output files:

1. From the File menu, select "Open character msg file…"
2. From the "Files of type" drop down list box, select "TranScan/8583 ASCII Output Files (*.a*)"
3. Select the file from the Open File dialog box (the default file extension is .a*).
4. Click "Open"



4.6 Retrieve a Message from FTS™ with TranScan/LAN™ add-on

FTS with TranScan/LAN add-on, purchased separately from TranScan Viewer, will automatically send application messages to the TranScan Viewer during:

- Live Capture mode (realtime display)
- Examining a Caputure (.cfa) file (already captured frames).

Note that FTS Ethertest can read Sniffer type 1 captured files (.enc).

4.6.1 Filtering Traffic in FTS

If the network you are monitoring has a lot of traffic that you are not interested in seeing, then use FTS's filtering capability. Creating and applying filters is performed from the "Frame Display" window. (The Frame Display window can be opened from the main window via the menu by clicking "Window"/"Frame Display".)

4.6.1.1 FTS Single Address Filter

If you are only interested in messages flowing from or to a specific endpoint, specify an address filter.

- From the Frame Display menu, select "Filter", then "Create/Apply Filter…"
- Click on the "Define Conditions" tab
- In the left box, click on the line "Node and Conversation
- Under "Node A", select "IP Address"
- Enter the IP address in the text box below the radial buttons
- Click the "Add" button"
- If asked, enter a filename to save this filter configuration and click Save.

4.6.1.2 Filter Frames Between Two Endpoints in FTS

You may specify multiple filters with logical AND or logical OR conditions.

For example, if you are only interested in messages flowing between two IP addresses on an Ethernet, follow the procedure below:

- From the Frame Display menu, select "Filter", then "Create/Apply Filter…"
- Click on the "Define Conditions" tab
- In the left box, click on the line "Node and Conversation
- Under "Node A", select "IP Address"
- Enter the IP address in the text box below the radial buttons
- Under "Node B", select "IP Address"
- Enter the IP address in the text box below the radial buttons
- Click the "Add" button"

4.7 Automation Server Calls

TranScan Viewer is an ActiveX Code Component (COM), Automation Server (formerly known as OLE Automation). Automation is one of the Microsoft standards for calling applications in Windows. Messages can be sent to TranScan Viewer from an Automation client.

The TranScan Viewer contains the class "TranScanViewer", with functions:

- ClearISOdisplayBuffers
- DisplayISOMsg
- GetDisplayMode
- SetDisplayMode
- GetFreeze
- SetFreeze
- GetFirstMsgNumber
- GetLastMsgNumber
- GetFormattedHTMLMsgs
- GetFormattedRTFMsgs

See section 14 Specifications for Automation Server Calls, for details specifications of these server calls.

4.8 Features for Messages Received from TranScan/LAN and Automation

Messages received via Automation

- are identified as either being received during a realtime "capture" mode, or a playback "examine" mode.
- can have a "protocol" associated with the message.

TranScan Viewer has additional features which can be utilizes for messages received as an Automation server:

- freezing/unfreezing display during "capture" mode
- support for TCP application header for TCP/IP protocol

4.8.1 Capture versus Examine Mode

Note that TranScan Viewer must be in Realtime Capture mode in order to accept messages from FTS when FTS is in live capture mode, or to accept messages via the "DisplayISOMsg" function call when the call is identified as "capture" mode.

Either click the Realtime Capture mode button  or from the "View" menu, select "Realtime Capture mode", to enter Realtime Capture mode.

To enter Examine mode, either click the Examine mode button  or from the "View" menu, select "Examine mode".

Use the Freeze option to freeze the TranScan Viewer display during realtime capture. While in freeze mode, TranScan Viewer will still accept realtime capture messages from FTS or via the "DisplayISOMsg" function, storing them in buffers.

To freeze, either click the freeze button  or from the "View" menu, select "Freeze"

To unfreeze, either click the unfreeze button  or from the "View" menu, select "Unfreeze"

While in examine mode, the Freeze and Unfreeze options are not in effect.

4.8.2 TCP Application Message Headers and Advanced TCP/IP Options

When used a part of the TranScan/LAN package or via the "DisplayISOMsg" function call, TranScan Viewer supports application message headers for the TCP protocol. Current supported headers include:

- no header
- Standard Header (2 byte length), where the length is inclusive of the header
- Standard Header (2 byte length), where the length is exclusive of the header
- Visa Header (2 byte length, plus 2 bytes reserved)
- Hyvee (4 byte ASCII length)

The number of bytes to skip before the TCP Application header can also be set. Normally this would be set to 0.

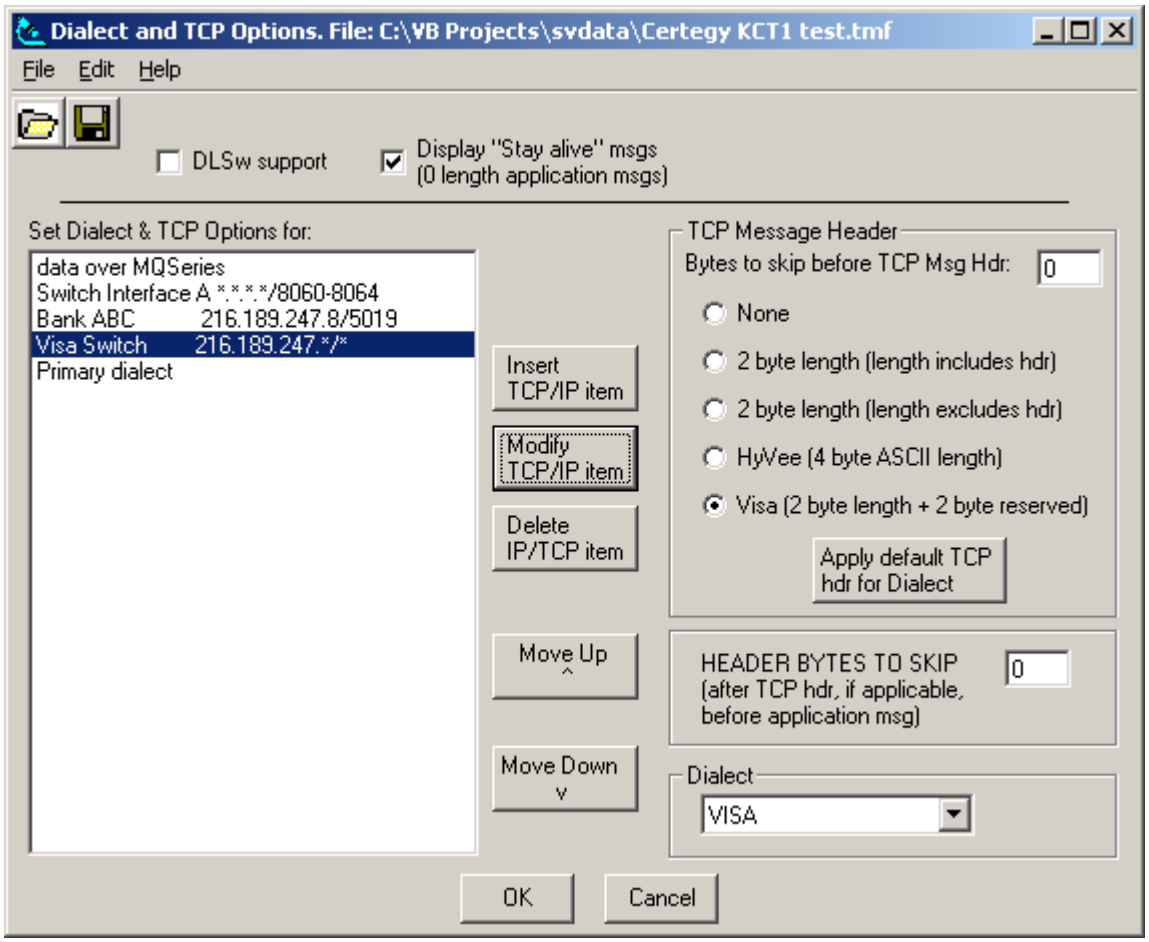
TranScan/LAN can be set up to support extracting application message from (Data Link Switch) DLSw encapsulated SNA data. DLSw uses TCP ports 2065 and 2067. When monitoring a LAN which is not using DLSw, and there is the possibility of ports 2065 or 2067 being used for non-DLSw data, it is recommended that the DLSw support be turned off.

To set the desired TCP message header, or to set the DLSw support option: from the "Options" menu, select "TCP…". The TCP message header option window will also be displayed by clicking on the "Advanced" tab of the Dialect Option window via the "View/Dialect…" menu.

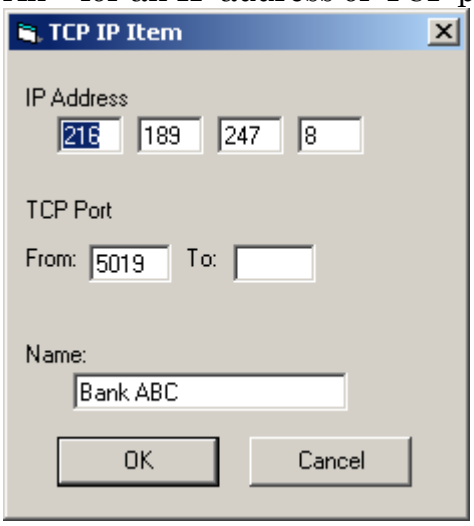
Separate TCP message header options can be chosen for messages over MQSeries versus those not over MQSeries. To set the TCP message header options for data over MQSeries, in the list "Set Dialect and TCP Options for:" chose "data over MQSeries".

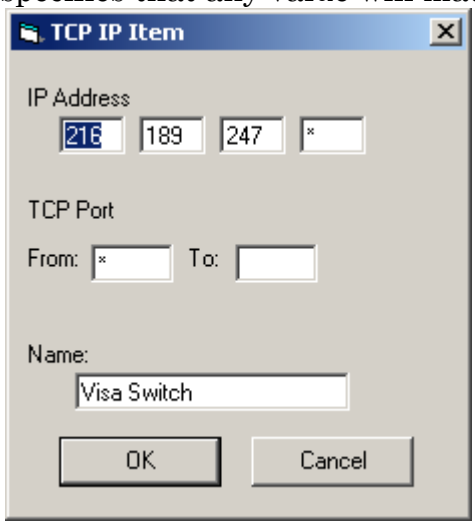
TranScan/LAN also supports TCP options and message dialect per defined TCP/IP port/address range. The order of selection for TCP defined options are:

1. MQSeries
2. First matching TCP/IP port/address range defined in the list, top-down.
3. The Primary Dialect.



An * for an IP address or TCP port specifies that any value will match.





TCP/IP message formatting rules can be saved in .tmf files. When the TranScan Viewer is started, the last .tmf file previously loaded will be loaded.

5. Display Options

5.1 Suppressing Display of Stay-Alive Messages

"Stay-Alive" messages are used over TCP/IP to keep sessions active, and do not contain any application message. They can have an application message length of either 0 or 1. Since there is no application message, the TranScan Viewer will display just the date, time and message number in the parsed output display. To suppress the displaying and printing of these zero or one byte length application messages:

1. From the Options menu, select "TCP…", the "TCP Options" window will appear.
2. Check the "Display Stay alive msgs (0 length application msgs)" check box.
3. If the "Stay-Alive" messages are 1 byte in length, check the "1-byte stay-alive" checkbox.
4. Click "OK"

5.2 Changing message formats (dialects)

For a simplified screen to change which format (or dialect of ISO 8583) is used for parsing of a message:

1. From the View menu, select "dialect…", the "Chose dialect" window will appear.
2. Separate dialect can be chosen for messages over MQSeries versus those not over MQSeries. To set the dialect for messages over MQSeries, in the drop down list "Set Dialect Options for:" chose "data over MQSeries". Otherwise, select "primary Dialect"
3. Select the dialect from the list.
4. Set header bytes to skip. These are usually set to zeroes[7].
5. Click "OK"

Note that for NVFO (Non-Visa Format Option) formats, all messages have a VisaNet header. TranScan Viewer parsing automatically detects the message format based on information in the VisaNet header. So, for NVFO MasterCard, NVFO AS2805, etc., select Visa format from the dialect list.

For advance message formatting options for data received over TCP/IP, click the "Advanced" tab, or go to the TCP options screen via the "Options/TCP Options…" menu item.

5.3 Changing field level display

To change how many of the parsed fields and sub-fields are displayed:

1. From the View menu, select "Field Display Level".
2. Select the desired display level.

The options for display level are:

- Complete Msg - displays all fields and sub-fields

[7] Some protocols, such as Bisync, have a additional protocol bytes that must be skipped over to get to the message. For Visa format, TranScan supports automatic skip over; thus, the skip over values can be set to 0.

- Msg Overview - displays a sub-set of fields and sub-fields
- Hdr/Routing - displays the minimal number of fields, header, plus fields used for routing

5.4 Changing between Descriptive Labels and Bit Number Labels

To toggle between descriptive labels and bit number for labels:

1. From the View menu, select "Labels".
2. Select the desired label format.

Example of descriptive label: PRI ACCT
Example of bit number label: BIT 002

5.5 Show blanks as non-blanks

From the View menu, select "Blanks as non-blank" to toggle between showing blanks as spaces, to showing blanks as the non-blank character ~.

5.6 Moving Through Messages in Display

TranScan Viewer keeps displayed messages in buffers. To move from one message to another, from the "Edit" menu, select "Go to…". The following menu options are then available:

- First Message
- Previous Message
- Next Message
- Last Message
- Message Number… (go to a specified message number)

The message movement buttons can also be used: 

5.7 Finding Matching Request/Response Messages

TranScan Viewer has a feature to find a matching request/response for the currently displayed message. This feature is limited to the messages in the TranScan Viewer display buffer. To find a matching Request or Response for the message that is currently displayed, from the "Edit" menu, select "Find Message…", then select either

- "Forward, Matching Request/Response" (This is good for finding a subsequent response for a request.)
- "Backward, Matching Request/Response" (This is good for finding a previous a request for a response.)

The key message fields for matching requests to responses is in the file "msgkey.ini" which resides in the "\Program Files\TranScan Viewer\System" directory. This file is also used by the Response Time Calculator add-in. Be sure to create a backup copy of msgkey.ini prior to making any changes to it.

5.8 Finding Messages with Parsing Errors

TranScan Viewer has a feature to find a messages with parse errors detected by the TranScan parsing. This feature is limited to the messages in the TranScan Viewer

display buffer. To find a messages with parse errors, from the "Edit" menu, select "Find Message…", then select either

- "Forward, Message with Parse Error"
- "Backward, Message with Parse Error"

5.9 Opening a Second Display Window

To open a second message display window, from the "View" menu, select "2ndWindow". A subset of the main window menu items are available in the second window. The second window is useful for viewer both a request message and its response at the same time.

The second window can also be opened by clicking on the "2" button: 

6. Printing Formatted Messages

To print the parsed message as displayed:

1. From the File menu, select "Print…", or use the Print messages button on the toolbar. The Print Options window will appear.
2. The default printer is shown at the top in a drop-down list box. To change printers, select the desired printer from the drop-down list.
3. In the comment box, enter any text you wish to appear as a comment on the printed output.
4. Use the check box to include the raw, unparsed message if desired.
5. Color or Black and White output can be selected.
6. Select the Print Range; all messages, selected range of messages, or current displayed message only.
7. Enter the number of copies desired.
8. Click "OK".

7. Saving Messages to File

This section describes the various file formats to which messages can be saved.

7.1 Saving a Message in Binary

To save messages to file, from the "File" menu, select "Save As…", or use the "Save Messages" button on the toolbar. The Save Message(s) window will display.
To save the unparsed message in its binary form:

1. Select the "Binary Message" option.
2. Select the message to be saved; selected message number, or current displayed message.
3. Click "OK". The Save As window will display.
4. If needed, change the path to the desired folder.
5. Enter the filename (the file extension will be .bim).
6. Click "Save".

7.2 Saving Character Display of Messages for Later Viewing

To save messages to file, from the "File" menu, select "Save As…", or use the "Save Messages" button on the toolbar. The Save Message(s) window will display.

To save the unparsed screen display (as displayed in the lower text box) for later viewing with the TranScan Viewer:

1. Select the "TranScan Viewer Character Display" option.
2. Select the messages to be saved; all messages, selected message range, or current displayed message.
3. Click "OK". The Save As window will display.
4. If needed, change the path to the desired folder.
5. Enter the filename (the file extension will be .tgs).
6. Click "Save".

7.3 Saving Parsed Message Display to an RTF or HTML Document

To save messages to file, from the "File" menu, select "Save As…", or use the "Save Messages" button on the toolbar. The Save Message(s) window will display.

To save the parsed message screen display (as displayed in the upper text box) into a document, either Rich Text Format (RTF) or HTML:

1. Select the "Parsed Display (Rich Text Format)" or "Parsed Display (HTML)" option.
2. In the comment box, enter any text you wish to appear as a comment at the top of the document.
3. Use the check box to include the raw, unparsed message if desired.
4. Select the messages to be saved; all messages, selected message range, or current displayed message.
5. For Rich Text Format, Color or Black and White output can be selected. (HTML will be in color.)
6. Click "OK". The Save As window will display.
7. If needed, change the path to the desired folder.
8. Enter the filename (the file extension will be .rtf for Rich Text Format).
9. Click "Save".

7.4 Saving Messages in TranScan/8583 Mega-Capture File Format

To save messages to file, from the "File" menu, select "Save As…", or use the "Save Messages" button on the toolbar. The Save Message(s) window will display.

The TranScan/8583 software contains additional features not currently implemented in the TranScan Viewer. To save the messages the TranScan/8583 mega-capture file format (.mcd file extension):

1. Select the "TranScan/8583 megacap (.mcd)" option.
2. Select the messages to be saved; all messages, selected message range, or current displayed message.
3. Click "OK". The Save As window will display.
4. If needed, change the path to the desired folder.
5. Enter the filename (the file extension will be .mcd).
6. Click "Save".

8. Copying a Parsed Message to the Clipboard

To copy a parsed message being displayed in the upper box:

- From the Edit menu, select "Copy Parsed Msg to Clipboard", or use the "Copy Message to Clipboard" button on the toolbar.

The text copied into the clipboard is in Text Format, without color. To copy the parsed message with color, selected the text in the upper text box using the mouse. Then press the keys "Ctrl" "C" at the same time.

9. Clear Messages from Display Buffers

To clear all of the messages from the TranScan Viewer display buffers, from the "Edit" menu, select "Clear Messages". Note that whenever a file is opened, the messages in the display buffer are cleared prior to opening the file. If the messages in the buffers were received via realtime capture, then TranScan Viewer will give a warning if the realtime capture messages have not been saved to file. The buffers are also cleared when switching from Examine mode to Realtime Capture mode.

10. Privacy Mode

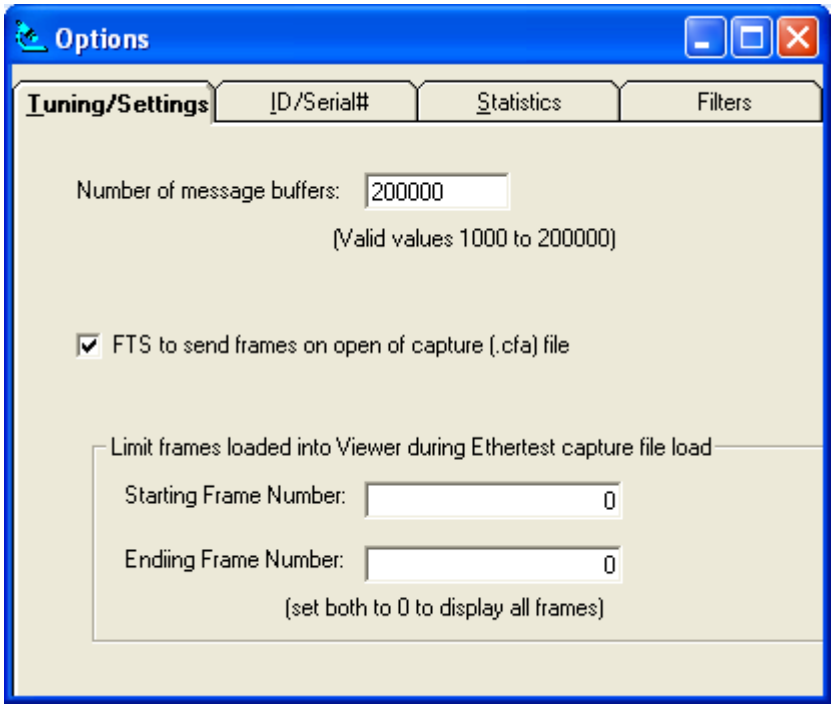
Privacy Mode allows for masking of sensitive cardholder data, such as account number, magnetic stripe data, PINs, and card security codes. To turn Privacy Mode on or off, from the "View" menu, select "Privacy Mode Field Masking".

11. Miscellaneous Options

11.1 Tuning

TranScan Viewer maintains messages in display buffers. TranScan Viewer uses the buffers in a wrap around fashion. The maximum number of display buffers can be set for optimal use. If this number is set low, new messages will quickly overlay the buffers used by older messages. If this number is set high, large memory resources will be used.

To set the number of message display buffers, from the "Options" menu, select "Options…". Set the number of message buffers on the "Tuning" tab, and click "OK".



Other options available in the Tuning tab are whether or not FTS is so send frames on open of a capture (.cfa) file; and if so, there is an option to limit what frame numbers are loaded into the TranScan Viewer from FTS (Ethertest, etc.).

12. Trouble Shooting

12.1 Trouble Shooting TranScan Viewer

This section covers various errors that may occur with TranScan Viewer. For additional support, send e-mail to support@transcan.com or phone 415-835-1000. The TranScan Viewer also keeps a log, tranview.log, which may be helpful in troubleshooting. Tranview.log resides in the TranScan Viewer\system directory.

Problem	Description/Action to take
No messages are being displayed, during capture of frames by FTS (Ethertest, SerialTest, etc.)	Ensure that the listening port is defined in "port assignments.ini" and "Transcan.personality" in Ethertest's "my decoders\" directory. Make a backup copy of these files prior to making any changes to them. In "port assignements.ini", add the port(s) to the [TCP] section. Format is: n=port, 0x7f028001 or n=startport-endport, 0x7f028001 In "Transcan.personality", add the port(s) to the [Port Assignments:TCP] section. Format is: port, 0x7f028001 or startport-endport, 0x7f028001 For TranScan Viewer to display messages from FTS, put TranScan Viewer into Realtime Capture mode and the Unfreeze the display. Ensure the option "FTS to send frames on open of capture (.cfa) file" is checked. This option is under the menu "Options", "Options…", "Tuning/Settings" tab.

Error Msg	Description/Action to take
Error executing ParseISO.dll	The file ParseISO.dll should be in the TranScan Viewer system directory, along with the file Tranview.exe. If this file has accidentally been erased, you may have to re-install TranScan Viewer.

Error Msg	Description/Action to take
Error in message #: n ……. Do you want to continue with remainder of messages?	An error was found while parsing the messages in the TranScan/8583 ASCII output file. Click "Yes" to continue with the next message. Click "No" to abort reading the file.
Error - only partial message found in file	TranScan Viewer is attempting to extract a message from a host console screen image. The file may not contain the entire message, or the file format may not be supported by TranScan Viewer. When trying to format data from the host console screen, if TranScan Viewer cannot find what it detects as a valid AM0SG[8] formatted message, an error message will be displayed. If the file contains a host console screen, make sure that the host console, the entire screen may not have been captured.

[8] AM0SG format is a TPF standard for the format of a message block.

Error Msg	Description/Action to take
Error One of the libraries files needed to run this application cannot be found.	TranScan Viewer needs the path to a file called SessMngr.DLR which is in the Extra! directory. Normally Extra installation will add/update a path statement in autoexec.bat so that it appears similar to: path=%PATH%;C:\PROGRA~1\CERTIF~1\EXTRA! which is the DOS short path name. If the autoexec.bat on your PC does not include the path to the Extra! directory, you will need to add it. Remember to make a backup copy of autoexec.bat prior to making any changes. To find the exact location of the Extra! directory, from the Windows "start" menu, select "find", then "files or folders". Then find file "SessMngr.DLR" on your c: drive. The default is the directory c:\Program Files\Certified Apps\Extra! If the file is in that directory, and there is no path statement in autoexec.bat, then by adding the following line as is, with quotation marks, to autoexec.bat, should take care of the problem. path=%path%;c:"\program files\certified apps\extra!" If there is a path statement, but the extra! directory is not specified, add the specification at the end. Directories in the path are separated by a semicolon(;). The PC must be restarted in order for this change to take effect.
Error reading dialects from file ISODIAL.TBL	The file isodial.tbl should be in the TranScan Viewer system directory, along with the file tranview.exe. If this file has accidentally been erased, you may have to re-install TranScan Viewer.
Error saving file ……	Ensure you have write access and enough disk space on the drive on which you are attempting to save the file.
File contains the text "MSG TYPE"; thus does not contain the hexadecimal display of the message." Continue reading file?"	The TranScan/8583 ASCII output file being read, contains the parsed messages. The messages should be in hexadecimal display. Click “OK” to continue reading file. Click “Cancel” to cancel reading of the file. (Note: In TranScan/8583, display the messages in hexadecimal format before creating the ASCII output file.)

Error Msg	Description/Action to take
Found start of msg with no end to prior msg.	TranScan Viewer just previously displayed "Message too short for AM0SG format. Display next portion then select OK" (see below) OK was selected without displaying the next portion of the message on the TPF console.
Invalid hex data: ..	When attempting to extract the ISO message from a character display, a value of other than 0-9, A-F was encountered where a hexadecimal digit was expected. The TPF console output may not have been display properly. Try clearing the TPF console screen, then re-entering the functional message.
Message too short for AM0SG format. Display next portion then select OK	The most likely cause of this message is due to a TPF console message that does not fit on one screen. To grab the rest of the message: 1. Switch to Extra and the TPF Console screen. 2. Display the remainder of the output from the Functional Message. 3. Switch back to TranScan Viewer. 4. Click "OK"
No messages found in input.	The Clipboard contains character or hexadecimal character display of the message, and the Clipboard option is set to "Host Formatted Msg Display". Check the option by selecting "Options" from the menu, then "Clipboard Contains:" -Or- The TPF console screen grabbed from Extra is not recognized as output from one of the functional message supported by TranScan Viewer. -Or- When trying to format data from the TPF console screen, if TranScan Viewer cannot find what it detects as a valid AM0SG formatted message, an error message will be displayed. Make sure that the TPF output does not wrap on the screen, clear the screen and re-enter the TPF functional message. If the screen output looks correct, print the TPF screen and contact Ontrac Consulting.
No message in clipboard	When pasting from the clipboard, the clipboard must contain text. The clipboard contains a picture or some other object, other than text.
No messages read, 0 length file.	The file you tried to open had a length of 0. Make sure you opened the correct file.

Error Msg	Description/Action to take
No parsed message to print. Print Canceled.	Ensure that a message is parsed and displayed in the upper text box of the TranScan Viewer prior to selecting the Print option.
Non-hexadecimal value:	A paste from clipboard operation was performed with the "Clipboard contains:" option set to "Hex Character Representation of Msg". TranScan Viewer is looking for only the characters 0 through 9 and A through F. If there is a host console screen in the clipboard, or a character message in the clipboard, change the "Clipboard contains:" options to match.
Odd number of hex characters, msg # …	When attempting to extract the ISO message from the TPF console, an odd number of hexadecimal digits were found. The TPF console output may not have been display properly. Try clearing the TPF console screen, then re-entering the functional message.
SV0005 MORE BITS IN MAP THAN DATA IN MESSAGE. LAST BIT PROCESSED IS 42 - or - SV0007 LENGTH FIELD FOR FIELD xxxxxx EXCEEDS END OF MESSAGE	For messages from FTS, • the message within TCP/IP protocol may span more than one frame. When messages span more than one frame, TranScan Viewer can combine two parts of a message. In FTS Ethertest, display the frame containing the remainder of the message in the frame display. • the message within SNA protocol may be chained or segmented. TranScan Viewer currently does not support combining messages which have been chained or segmented.
System Error, File Sharing Violation on drive *d*	TranScan Viewer uses some temporary files when grabbing and formatting an screen display from Extra. You may have 2 copies of TranScan Viewer running. If so, exit all but one.
TranScan Viewer trial period over.	Each copy of TranScan Viewer requires an execution ID beyond the trial period. There is a finite number of licenses that were purchased and can be installed. For each license, you are given a grace period between the time the software is installed, and the time an execution ID must be entered. Contact Ontrac Consulting after the installation, to receive your execution ID specific to the installed copy of TranScan Viewer.

Error Msg	Description/Action to take
Unable to activate link to Extra	TranScan Viewer normally establishes a session (connection) to Extra when you click on "Grab Message". Make sure Extra is started, then exit and restart TranScan Viewer.
Unable to activate TranGrab.dll	The file trangrab.dll should be in the TranScan Viewer system directory, along with the file tranview.exe. If this file has accidentally been erased, you may have to re-install TranScan Viewer.
Unable to get information from Extra.	1. Remote TPF consoles will automatically logoff the user when the keyboard has been idle for a few minutes. If this happens, and a request is made by TranScan Viewer to "grab" an ISO message, then this error message will occur. Click "OK" or press ENTER, then log back onto the TPF console and redisplay the message.. 2. TranScan Viewer normally establishes a session (connection) to Extra when you click on "Grab Message". Make sure Extra is started.
Unable to open temporary file ..\SVDATA\$$MSG.RTF for output -or- Unable to open output file …… - or - Unable to open file ……	TranScan Viewer uses temporary files to when extracting a message from an Extra screen display. These temporary files are put into the svdata\ sub-directory of the directory where TranScan Viewer was installed (default install directory is C:\Program Files\TranScan Viewer\). 1. Verify that you have at least 20 K free disk space. 2. Verify that the svdata\ sub-directory has not been deleted or renamed. 3. Verify that you have write access to the drive where TranScan Viewer is installed. (TranScan Viewer does not support LAN based execution.)

13. TranScan Viewer Character Message File Format

This section contains the specifications for TranScan Viewer's Character Message file format. Files in this format can be opened in TranScan Viewer via the menu option "File", "Open Character msg file…".

The file must be an ASCII text file. TranScan Viewer uses a default file extension of .tgs.

Record	Positions	Field
1	1 to 13	The constant ++TSViewer++C Upper and lower case must be exact.
1	14 to 18	Version number. Currently must be constant V01.1 The V must be in upper case. The 0 is the number zero
2	1 to 4	Direction, either RECV or XMIT in upper case.
2	5	filler
2	6 to 28	Optional time stamp. In the form: `yyyy/mm/dd hh:mm:ss.mmm`
3 to m	1 to x	Hexadecimal character representation of the message. Must be 0-9, A-F, a-f or space. Spaces are ignored.
m+1		If more than one message, this starts the second message. The format is the same as record 2, with direction and timestamp.
m+2 to m+n		Hexadecimal character representation of second message.
…		Additional messages formatted as described in record 2 through record m.

The following example contains messages formatted according to the "ASCII/1993" dialect of ISO/8583.

```
++TSViewer++CV01.1
RECV 1999/12/31 01:12:34.567
30383030 00000000 00010000 30353149
6620796F 75206361 6E207265 61642074
6869732C 20746865 206D6573 73616765
20706172 73656420 636F7272 6563746C
792E
XMIT 1999/12/31 01:12:35.321
30383030 0000000000010000 303531 496620796F752063616E
 207265616420 74686973 2C2074686520
6D65737361676520 706172736564206F72726563746C792E
```

14. Specifications for Automation Server Calls

14.1 Clear TranScan Viewer Display Buffers

ClearISOdisplayBuffers takes the following arguments:

Argument	data type, Visual Basic	data type, Visual C++
ClearReason	integer	short integer

and returns:

	data type, Visual Basic	data type, Visual C++
{return value})	integer	short integer

Where:

ClearReason = reason for clearing buffers. Currently not used. 0-999 reserve for Ontrac use.

{return value} = 0 if buffers cleared successfully
non-0 if buffers not cleared

14.2 Format and Display ISO Message

DisplayISOMsg takes the following arguments:

Argument	data type, Visual Basic	data type, Visual C++
ISOMsg	String	BSTR*
msgDirection	Integer	short integer*
cProtocol	String	BSTR*
TimeStamp	String	BSTR*
Source	String	BSTR*
Dest	String	BSTR*
BytesTrunc	Integer	short integer*
DisplayMode	Long	long integer*

and returns:

	data type, Visual Basic	data type, Visual C++
{return value})	integer	short integer

Where:

ISOMsg = the message as a string of hexadecimal character representation of the message

msgDirection = message direction, 0 = transmit, non-0 = receive

cProtocol = protocol used to transmit the message (e.g. TCP, TCPIP, SNA, NONE) Currently, only TCP and TCPIP have any special processing for protocol.

TimeStamp = time stamp of message transmission,
format: yyyy/mm/dd hh:mm:ss.mmm or yyyy/mm/dd hh:mm:ss

Source = source associated with message. For example, TranScan/LAN sets the source to the hardware address of the Ethernet. If protocol is TCPIP, and the Source is 8 characters of

hexadecimal digits (0-9, A-F), then Source if interpreted and formatted as an IP address. (e.g. for Source="A1CCC728", then TranScan Viewer will display "161.204.199.40")

Dest = destination associated with message. For example, TranScan/LAN sets the destination to the hardware address of the Ethernet card. If protocol is TCPIP, and the Dest is 8 characters of hexadecimal digits (0-9, A-F), then the Dest is interpreted and formatted as an IP address.

BytesTrunc = The number of bytes at the end of the message which have been truncated, and thus are not available for parsing. For TCP protocol, with an application header, TranScan Viewer can then perform a better job of combining messages which have been split across multiple frames.

DisplayMode = indication of realtime capture versus a playback examine mode. 0 = realtime capture, 1 = examine mode. This setting determines how the TranScan Viewer screen display can be frozen, and still save incoming messages in buffers.

{return value} = numerical expression which is the sum of the value indicating the following:

- 1 = message accepted and written to message buffers
- 2 = TranScan Viewer in Examine mode
- 4 = Display is frozen (only set when TranScan Viewer is in Capture mode, i.e. not in Examine mode)
- 80 = Not authorized. e.g.: TranScan Viewer trial period over.

See section 15. Example Code for Calls to TranScan Viewer, for examples of calls to "DisplayISOMsg" function from Visual C++, Visual Basic, and Visual Basic for Application.

14.3 Get Display Mode (Realtime/Examine)

GetDisplayMode takes the following arguments:

Argument	data type, Visual Basic	data type, Visual C++
(none)		

and returns:

	data type, Visual Basic	data type, Visual C++
{return value})	integer	short integer

Where:

{return value} = 0 = Realtime,
1 = Examine

14.4 Set Display Mode (Realtime/Examine)

SetDisplayMode takes the following arguments:

Argument	data type, Visual Basic	data type, Visual C++
ViewerDisplayMode	integer	short integer *

and returns:

	data type, Visual Basic	data type, Visual C++
{return value})	integer	short integer

Where:

ViewerDisplayMode = 0 = Realtime,
1 = Examine

{return value} = 0 if buffers cleared successfully
1 = invalid input value
(other non-zero values reserved for other TranScan Viewer errors)

14.5 Get Display Freeze Setting

GetFreeze takes the following arguments:

Argument	data type, Visual Basic	data type, Visual C++
(none)		

and returns:

	data type, Visual Basic	data type, Visual C++
{return value})	integer	short integer

Where:

{return value} = 0 = Display is not frozen,
1 = Display is frozen

14.6 Set Display Freeze/Unfreeze

SetFreeze takes the following arguments:

Argument	data type, Visual Basic	data type, Visual C++
ViewerFreeze	integer	short integer *

and returns:

	data type, Visual Basic	data type, Visual C++
{return value})	integer	short integer

Where:

ViewerFreeze = 0 = Unfreeze,
1 = Freeze

{return value} = 0 if buffers cleared successfully
1 = invalid input value
(other non-zero values reserved for other TranScan Viewer errors)

14.7 Get Message Number of First Message in TranScan Viewer Display Buffer

GetFirstMsgNumber gets the message number of the first message in the TranScan Viewer buffers. GetFirstMsgNumber takes the following arguments:

Argument	data type, Visual Basic	data type, Visual C++
(none)		

and returns:

	data type, Visual Basic	data type, Visual C++
{return value})	Long	long integer

Where:

{return value} = 0 = no messages in buffer,
otherwise, returns the message number of the first message in the TranScan Viewer buffer.

14.8 Get Message Number of Last Message in TranScan Viewer Display Buffer

GetLastMsgNumber gets the message number of the last message in the TranScan Viewer buffers. GetLastMsgNumber takes the following arguments:

Argument	data type, Visual Basic	data type, Visual C++
(none)		

and returns:

	data type, Visual Basic	data type, Visual C++
{return value})	Long	long integer

Where:

{return value} = 0 = no messages in buffer,
otherwise, returns the message number of the last message in the TranScan Viewer buffer.

14.9 Get Messages Formatted in HTML

GetFormattedHTMLMsgs takes the following arguments:

Argument	data type, Visual Basic	data type, Visual C++
RequestedFirstMsgNumber	Long	long integer *
RequestedLastMsgNumber	Long	long integer *
IncludeRawMessage	String	BSTR*
Comment	String	BSTR*

and returns:

Argument	data type, Visual Basic	data type, Visual C++
FormattedOutput	String	BSTR*
ErrMsg	String	BSTR*

	data type, Visual Basic	data type, Visual C++
{return value})	integer	short integer

Where:

RequestedFirstMsgNumber =	0 = current displayed message Otherwise, the message number of the first message to be formatted and returned
RequestedLastMsgNumber =	The message number of the last message to be formatted and returned. (Ignored if RequestedFirstMsgNumber = 0)
IncludeRawMessage =	Y = raw hexadecimal message to be included with returned formatted message N = raw hexadecimal message not to be included.
Comment =	Text of comment to be placed in output
FormattedOutput =	Output string formatted in HTML
ErrMsg	If error occurred (return value not 0), contains error text
{return value} =	0 messages successfully formatted 2001 = Requested First Message greater than last. 2003 = No messages to display. 2004 = Message numbers not within range 2005 = The 'from' value cannot be greater than the 'to' value. 2006 = Maximum output is 250 messages. (other non-zero values reserved for other TranScan Viewer errors)

14.10 Get Messages Formatted in RTF

GetFormattedRTFMsgs takes the following arguments:

Argument	data type, Visual Basic	data type, Visual C++
RequestedFirstMsgNumber	Long	long integer *
RequestedLastMsgNumber	Long	long integer *
IncludeRawMessage	String	BSTR*
Comment	String	BSTR*

and returns:

Argument	data type, Visual Basic	data type, Visual C++
FormattedOutput	String	BSTR*
ErrMsg	String	BSTR*

	data type, Visual Basic	data type, Visual C++
{return value})	integer	short integer

Where:

RequestedFirstMsgNumber =	0 = current displayed message Otherwise, the message number of the first message to be formatted and returned
RequestedLastMsgNumber =	The message number of the last message to be formatted and returned. (Ignored if RequestedFirstMsgNumber = 0)
IncludeRawMessage =	Y = raw hexadecimal message to be included with returned formatted message N = raw hexadecimal message not to be included.
Comment =	Text of comment to be placed in output
FormattedOutput =	Output string formatted in RTF
ErrMsg	If error occurred (return value not 0), contains error text
{return value} =	0 messages successfully formatted 2001 = Requested First Message greater than last. 2003 = No messages to display. 2004 = Message numbers not within range 2005 = The 'from' value cannot be greater than the 'to' value. 2006 = Maximum output is 250 messages. (other non-zero values reserved for other TranScan Viewer errors)

15. Example Code for Calls to TranScan Viewer

The executable, tranview.exe, include type library information for the TranScan Viewer. This can be used with Visual Studio, or other programming environment to generate a class wrapper for the TranScanViewer class, for a programming project.

15.1 Example MFC Visual C++ Code

Using the Class Wizard in Visual Studio, add a class from the tranview.exe executable. Below is an example of the files generated, tranview.h and tranview.cpp:

tranview.h:

```
// Machine generated IDispatch wrapper class(es) created with ClassWizard
/////////////////////////////////////////////////////////////////////////////
// _TranScanViewer wrapper class

class _TranScanViewer : public COleDispatchDriver
{
public:
      _TranScanViewer() {}    // Calls COleDispatchDriver default constructor
      _TranScanViewer(LPDISPATCH pDispatch) : COleDispatchDriver(pDispatch) {}
```

```
      _TranScanViewer(const _TranScanViewer& dispatchSrc) :
COleDispatchDriver(dispatchSrc) {}

// Attributes
public:

// Operations
public:
      short DisplayISOMsg(BSTR* ISOMsg, short* msgDirection, BSTR* cProtocol,
BSTR* TimeStamp, BSTR* Source, BSTR* Dest, short* BytesTrunc, long* DisplayMode);
      short ClearISOdisplayBuffers(short* ClearReason);
};
```

tranview.cpp:

```
// Machine generated IDispatch wrapper class(es) created with ClassWizard

#include "stdafx.h"
#include "tranview.h"

#ifdef _DEBUG
#define new DEBUG_NEW
#undef THIS_FILE
static char THIS_FILE[] = __FILE__;
#endif


/////////////////////////////////////////////////////////////////////////////
// _TranScanViewer properties

/////////////////////////////////////////////////////////////////////////////
// _TranScanViewer operations

short _TranScanViewer::DisplayISOMsg(BSTR* ISOMsg, short* msgDirection, BSTR*
cProtocol, BSTR* TimeStamp, BSTR* Source, BSTR* Dest, short* BytesTrunc, long*
DisplayMode)
{
      short result;
      static BYTE parms[] =
            VTS_PBSTR VTS_PI2 VTS_PBSTR VTS_PBSTR VTS_PBSTR VTS_PBSTR VTS_PI2
VTS_PI4;
      InvokeHelper(0x60030028, DISPATCH_METHOD, VT_I2, (void*)&result, parms,
            ISOMsg, msgDirection, cProtocol, TimeStamp, Source, Dest, BytesTrunc,
DisplayMode);
      return result;
}

short _TranScanViewer::ClearISOdisplayBuffers(short* ClearReason)
{
      short result;
      static BYTE parms[] =
            VTS_PI2;
      InvokeHelper(0x6003002c, DISPATCH_METHOD, VT_I2, (void*)&result, parms,
            ClearReason);
      return result;
}
```

Below is an example C++ call:

```
{
      TranScanViewer m_TSView;
      BSTR  msgB; /* msg */
      short bDirection = 1;         /* 1 = receive */
      long  DisplayMode = 0;        /* realtime capture mode */
      BSTR  ProtocolB;
      BSTR  srceB;
      BSTR  destB;
      BSTR  DateTimeB;
      short sTrunc = 0;
      msgB = SysAllocString (L"303230300000000000010000"
                  L"303531496620796F752063616E"
                  L"20726561642074686973732C2074686520"
                  L"6D65737361676520706172736564206F72726563746C792E");
      ProtocolB = SysAllocString (L"NONE");
      srceB = SysAllocString (L"123456");
      destB = SysAllocString (L"654321");
      DateTimeB = SysAllocString (L"2001/12/31 23:59:59.012");

      if (!m_TSView.CreateDispatch(_T("TranView.TranScanViewer"),NULL))
      {
            AfxMessageBox("cannot create TSView");
      }
      else
      {

            try
            {
                  m_TSView.DisplayISOMsg(&msgB, &bDirection, &ProtocolB,
                        &DateTimeB, &srceB, &destB, &sTrunc, &DisplayMode);
            }
            catch (COleException* e)
            {
                  e->Delete();
                  AfxMessageBox("unable to send message to TranScan Viewer");
            }
            m_TSView.ReleaseDispatch();
      }
      SysFreeString(msgB);
      SysFreeString(DateTimeB);
      SysFreeString(srceB);
      SysFreeString(destB);
      SysFreeString(ProtocolB);
      SysFreeString(destB);
}
```

15.2 Example Visual Basic Code

The following code is an example of how to call the TranScan Viewer from a Visual Basic project.

1. Open a new Visual Basic Project
2. Add a Command button to the form
3. Enter the following code[9]
4. Start the TranScan Viewer
5. Start the Visual Basic program and click the command button.

```
Private Sub Command1_Click()
     Dim TSViewer As Object
     Dim rc As Integer
     Dim msg As String
     Dim Direction As Integer
     Dim DateAndTime As String
     Dim DispMode As Long

     msg = "30323030" & "0000000000010000"   'msg type and bitmap
     msg = msg & "303531" & "496620"         'fld len and 1st part
     msg = msg & "796F752063616E2072656164207468697 32C2074686520"
     msg = msg & "6D6573736167652070617273656420"
     msg = msg & "636F72726563746C792E"

     Direction = 1                           'direction = received
     DateAndTime = "2000/02/29 23:59:59.012"
     DispMode = 1                            'display mode = examine

     Set TSViewer = CreateObject("tranview.TranScanViewer")
     rc = TSViewer.DisplayISOMsg(ISOMsg:=msg, _
                                 msgDirection:=Direction, _
                                 cProtocol:="none", _
                                 TimeStamp:=DateAndTime, _
                                 Source:="", _
                                 Dest:="", _
                                 BytesTrunc:=0, _
                                 DisplayMode:=DispMode)

     MsgBox "Msg sent to TranScan Viewer.  Returned value = " & rc
     Set TSViewer = Nothing

End Sub
```

[9] The same code can be used in a Visual Basic for Applications (VBA), such as an Excel macro. (You may need to remove the "Private" declaration for a VBA macro.

End of Document