



IBM Software Group

WebSphere Data Interchange

DT Map Tracing

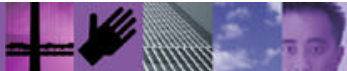
WebSphere. software





Objectives

- What is the DT Trace?
- TRACELEVEL keyword
- Trace examples
- What does it mean?





What is the DT Trace?

- The DT Trace was initially intended for use by WDI Development. Almost all WDI components that are part of the Message Flow have trace statements that show the entry and exit of all function calls within the module that are being executed. There are also trace statements that dump out the Input Buffer, Abstract Message, particular data values, transaction store values, etc. The information recorded in the trace file depends on the TRACELEVEL() keyword on the perform TRANSFORM command.
- DT Tracing begins and ends in the message flow with the Message Broker. The WDI Utility and WDI DT Utility have trace statements in the Service Director trace, EDITRACE.
- Some customers use the trace to trace variables within their mapping.
- Development uses the trace for problem determination.

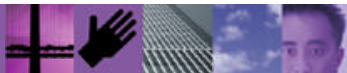




TRACELEVEL Keyword

- Indicates the level of DT tracing done during the transform process. For z/OS, trace data will be written to ddname EDIDTTRC. For CICS, trace data will be written to the TD queue defined for EDI standard output. If required you can change the TD queue to a TS queue. For AIX and Windows platforms the trace data will be written to the file defined by the environment variable EDIDTTRC. You can set this using export command on AIX platforms or the set command on Windows platforms.

For example: export EDIDTTRC=trace.out
or
set EDIDTTRC=trace.out.





TRACELEVEL Keyword

- The format for the keyword is TRACELEVEL(value)
- The value consists of a series of Xn values which represent the component and trace level for the component. The valid values for the component ID are:
 - ▶ A All nodes
 - ▶ C Storage Checkpoint
 - ▶ D Deenveloper node
 - ▶ E Enveloper node
 - ▶ M Message broker
 - ▶ P Parsers
 - ▶ R Rules node
 - ▶ T Transformation node
 - ▶ V Validation node
- The valid values for the component tracing level are:
 - ▶ 0 All trace messages are ignored.
 - ▶ 1 Normal tracing. Only the first 256 bytes of data in the buffer are written to the trace file.
 - ▶ 2 Extended tracing. The entire contents of the buffer is written to the trace file.
 - ▶ 3 Utility function tracing. Includes all the tracing done at level 2 plus additional tracing for some frequently called internal utility functions.



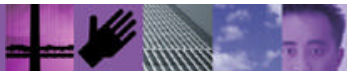


TRACELEVEL Keyword

- For example, a value of D1 V2 R2 would mean the deenveloper node (D) is set for normal tracing (1), the validation (V) and rules (R) nodes are set for extended tracing (2).

PERFORM TRANSFORM WHERE..... TRACELEVEL(D1 V2 R2)

- Activating tracing may negatively impact performance. Tracing should be turned off except when problem determination is required.
- This keyword is used only with the TRANSFORM command
- Use TRACELEVEL(A1) to trace mapping variables.





TRACELEVEL Keyword

- The Checkpoint trace, or Storage Checkpoint, shows date/time and the heap storage used. This allows tracking of memory usage. It is available on z/OS only.
- Not all DT components display checkpoint information.
- Example is:
PERFORM TRANSFORM WHERE TRACELEVEL(C1)





TRACE output examples




```
edidtrc.out2 - WordPad
File Edit View Insert Format Help
[Icons]

---- MCB at entry: (0012cfbc), size = 580 ---
0000:18FCAE00 AD100000 48424D56 31554E49 |.i@....HBMV1UNI|
0010:434545 20202020 20202020 20202020 |CODE
0020:20202020 20204842 4D5F5245 4D495454 | HBM_REMITT|
0030:414E4345 41445549 43455F30 30312020 |ANCEADVCE_001
0040:20202020 58202020 20202020 20202020 | X
0050:20202020 20200000 00006564 69656333 | ....ediec3|
0060:32653130 14D31200 41332020 20202020 |2e10.Ó..A3
0070:20202020 20202020 20202020 20202020 |
0080:20202020 20202020 20202020 20202020 |
0090:20202020 20202020 20202020 20202020 |
00A0:20202020 20202020 20202020 20202020 |
00B0:20202020 20202020 20202020 20202020 |
00C0:20202020 20202020 20202020 20202020 |
00D0:20202020 20202020 20202020 20202020 |
00E0:20202020 20202020 20202020 20202020 |
00F0:20202020 20202020 20202020 20202020 |
0100:20202020 20202020 20202020 20202020 |
0110:20202020 20202020 20202020 20202020 |
0120:20202020 20202020 20202020 20202020 |
0130:20202020 20202020 20202020 20202000 |
0140:00000000 00000000 00000000 00000000 |.....
0150:00000000 00000000 00000000 00000000 |.....
0160:00000000 00000000 00000000 00000000 |.....
0170:00000000 00000000 00000000 45444946 |.....EDIF|
0180:46532020 4E4E5920 20202020 2020204E |FS NNY N|
0190:20202020 20202020 59594E20 1E000000 | YYN ....
01A0:4E000000 00000000 00000000 00000000 |N.....
01B0:4E000000 00000000 00000000 00000000 |N.....
01C0:00000000 00000000 00000000 00000000 |.....
01D0:4E002020 20202020 30202059 4E4E2020 |N. 0 YNN
01E0:20202020 20202020 20202020 20202020 |
01F0:20202020 20202020 20202020 20202020 |
0200:20202020 20202020 20202020 20202020 |
0210:20202020 20202020 20202020 20202020 |
0220:20202020 20202020 20202020 2020414C | AL|
0230:5048414E 554D0000 00000000 01000000 |DHANIM
```

Message Broker entry
and
input message



```

0230:5048414E 554D0000 00000000 01000000 |PHANUM.....|
0240:00000000 |....|
---- State info at entry: (00000000), size = 44 ---
EDIMB: GET THE INPUT PARMS:
EDIMB: Dictionary name (HBMV1UNICODE )
EDIMB: Document name (HBM_REMITTANCEADVICE_001 )
EDIMB: Syntax (X)
EDIMB: XML Val ( )
EDIMB: Map id ( )
EDIMB: System ( )
EDIMB: Plan name (ediec32e)
EDIMB: Trace level (A3 )
EDIMB: XML DTDs ( )
EDIMB: XML EBCDIC ( )
EDIMB: Sender Nickname ( )
EDIMB: Sender Id ( )
EDIMB: Sender Qual ( )
EDIMB: Receiver Nickname ( )
EDIMB: Receiver Id ( )
EDIMB: Receiver Qual ( )
EDIMB: Applid (EDIFFS )
EDIMB: TS Active (N)
EDIMB: TS Images (N)
EDIMB: FA Images (Y)
EDIMB: Earliest Env Date ( )
EDIMB: FA Delay (N)
EDIMB: Batchset ( )
EDIMB: Proc Dup Env (Y)
EDIMB: Envelope (Y)
EDIMB: Deenv only (N)
EDIMB: Direction ( )
EDIMB: Purge Int (30)
EDIMB: MQMD/RFH2 data:
EDIMB: Input data:
0000:3C3F786D 6C207665 7273696F 6E3D2231 |<?xml version="1|
0010:2E302220 656E636F 64696E67 3D225554 |.0" encoding="UT|
0020:462D3822 3F3F0D0A 3C48424D 5F52454D |E_8"2\ /HRM DEM|

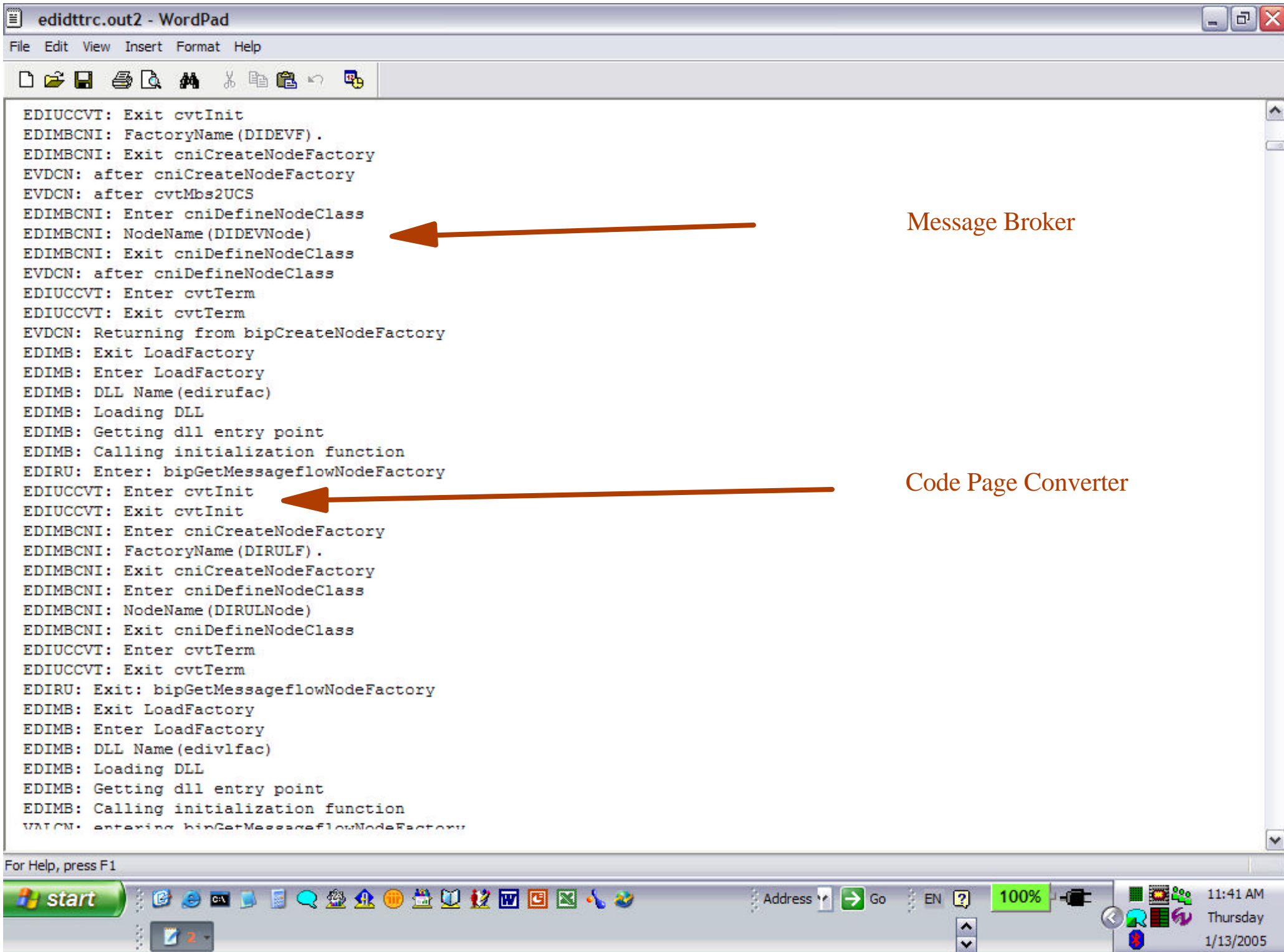
```

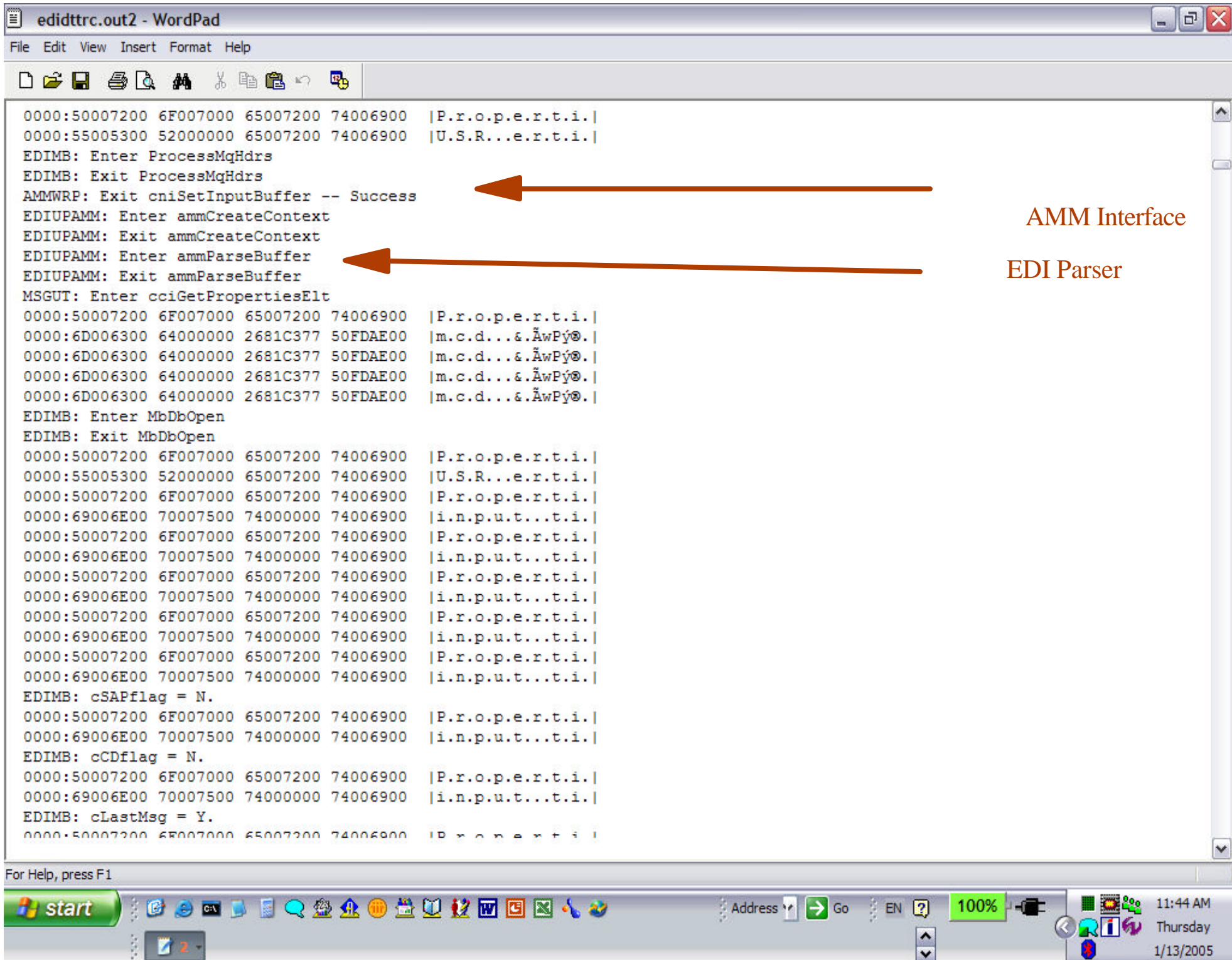


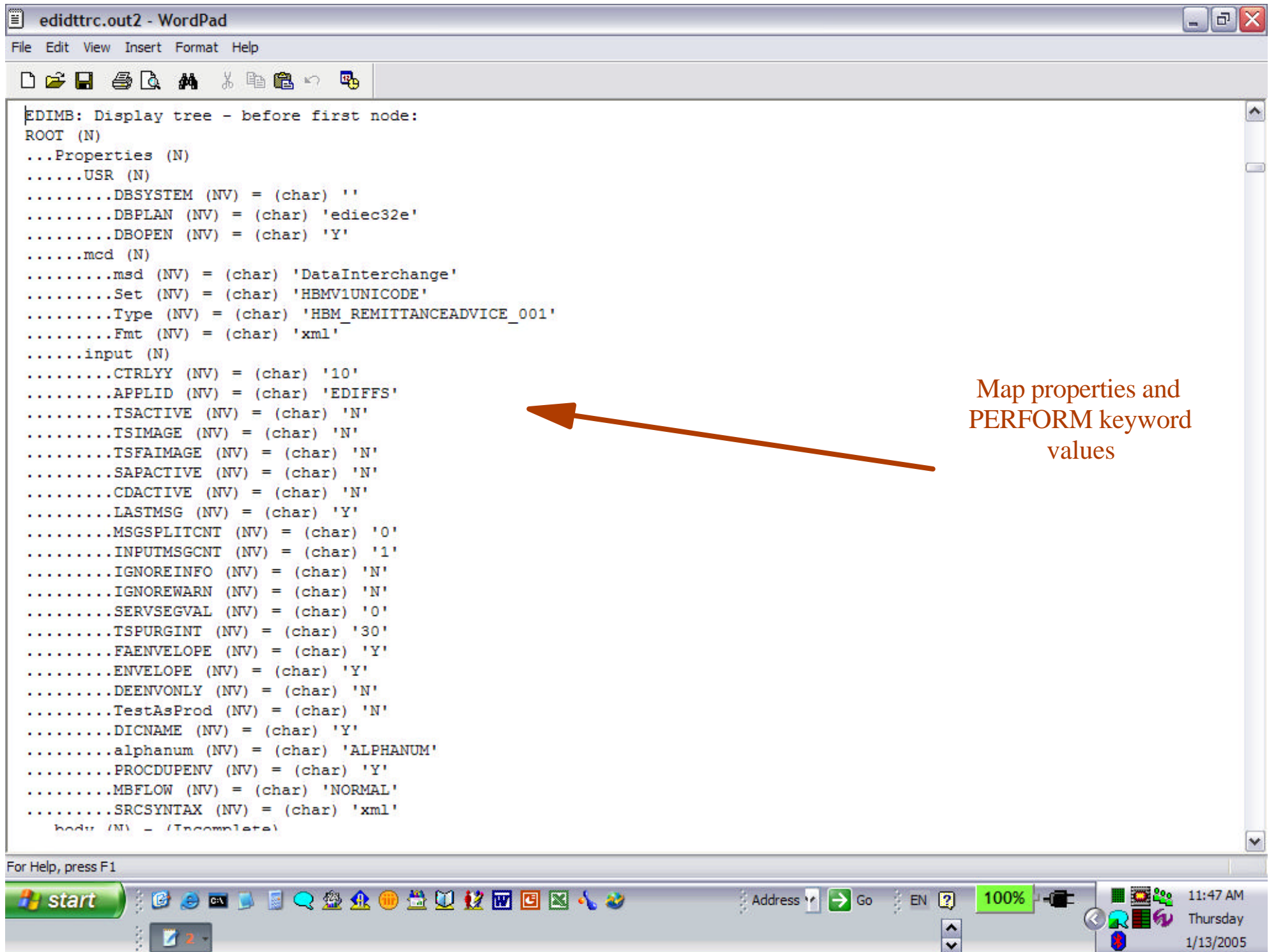
Message Broker keyword values



Input Message







Map properties and PERFORM keyword values

```
edidtrc.out2 - WordPad
File Edit View Insert Format Help
...body (N) - (Incomplete)
EDIMB: Exit CreateSourceMsg
EDIMB: Call cniEvaluate on the first node in the flow:
MBFLW: Enter CMsgFlowNode::Evaluate
MBFLW: Enter CNodeClass::Evaluate
EVDCN: Enter deenvelope node cniEvaluate
EVICL: deenvelopeMsg pluginDataLoaded = 0
(C:\NE32\src\edievic1.cpp:836)
EVICL: calling loadPluginData from deenvelopeMsg
EVICL: Enter loadPluginData
EVICL: inside loadPluginData
EVIDB: Entering getEDIENVTBL
EVIDB: Leaving getEDIENVTBL
EVICL: Loading Plugins...
EVICL: logical name ->
EVICL: syntax ->
EVICL: loadmod name ->
EVICL: logical name ->
EVICL: syntax ->
EVICL: loadmod name ->
EVICL: logical name ->
EVICL: syntax ->
EVICL: loadmod name ->
EVICL: logical name ->
EVICL: syntax ->
EVICL: loadmod name ->
EVICL: logical name ->
EVICL: syntax ->
EVICL: loadmod name ->
EVICL: logical name ->
EVICL: syntax ->
EVICL: loadmod name ->
EVICL: After calling loadPluginData from deenvelopeMsg
MSGUT: Enter cciGetPropertiesElt
0000:50007200 6F007000 65007200 74006900 |P.r.o.p.e.r.t.i.|
EVICL: Enter EnvInf::convertToUCS
EVICL: 0xb00930 inputBuffer = (adf)
EVICL: 0x0 pcvtHandle address
EDIUCCVT: Enter cvtInit
EDIUCCVT: Exit cvtInit
```



De-enveloping Message

For Help, press F1



```

EVXML: get the Body element
EVXML: MsgRoot = af7e00
EVXML: Enter getMetaData
MSGUT: Enter cciGetPropertiesElt
0000:50007200 6F007000 65007200 74006900 |P.r.o.p.e.r.t.i.|
EVXML: Exit getMetaData
EVXML: Dictionary = HBMV1UNICODE
EVXML: Document = HBM_REMITTANCEADVICE_001
AMMNODE: Enter GetParser
AMMNODE: Checking node for parser:
...body (N) - (Incomplete)
AMMNODE: Exit GetParser
EDIUPAMM: Enter ammParseFirstChild
EDIUPAMM: Enter ParseData
EDIUPAMM: XMLBCDIC attribute not found - using default
EDIUPAMM: Setting EBCDIC encoding on
EDIUPAMM: XMLVALIDATE attribute not found - using default
EDIUPAMM: Setting DTD on, validation off
EDIUPAMM: XMLNS attribute not found - using default
EDIUPAMM: Setting namespaces off
EDIUPAMM: XMLSCHEMAVAL attribute not found - using default no
EDIUPAMM: Setting schema validation off
EDIUPXML: Enter ParseBuffer
0000:3C3F786D 6C207665 7273696F 6E3D2231 |<?xml version="1|
0010:2E302220 656E636F 64696E67 3D225554 |.0" encoding="UT|
0020:462D3822 3F3E0D0A 3C48424D 5F52454D |F-8"?>..<HBM_REM|
0030:49545441 4E434541 44564943 455F3030 |ITTANCEADVICE_00|
0040:313E0D0A 20203C47 656E6572 616C4D65 |1>.. <GeneralMe|
0050:73736167 65486561 6465723E 0D0A2020 |ssageHeader>.. |
0060:20203C52 65636569 76657254 5049443E | <ReceiverTPID>|
0070:4342333C 2F526563 65697665 72545049 |CB3</ReceiverTPI|
0080:443E0D0A 20202020 3C456E76 656C6F70 |D>.. <Envelop|
0090:653E0D0A 20202020 20203C54 7970653E |e>.. <Type>|
00A0:4144463C 2F547970 653E0D0A 20202020 |ADF</Type>.. |
00B0:20203C52 65636569 76657249 443E0D0A | <ReceiverID>..|
00C0:20202020 20202020 3C547970 653E4E2F | <Type>N/|
00D0:413C2F54 7970653E 0D0A2020 20202020 |ADF</Type>..|

```



XML De-enveloper



```

EDIRU: 00278:iErr:-1:
EDIRU: 00284:iErr:-1:
EDIRU: 00290:iErr:-1:
EDIRU: 00296:iErr:-1:
EDIRU: 00302:iErr:-1:
EDIRU: 00308:iErr:-1:
EDIRU: 01282:pRuleParms->szDocName:HBM_REMITTANCEADVICE_001      :
EDIRU: 01283:pRuleParms->szDictName:HBMV1UNICODE                :
EDIRU: 01284:pRuleParms->szSyntax:xml:
EDIRU: 01285:pRuleParms->szUsageInd:P:
EDIRU: 01286:pRuleParms->szSenderTPName:UNKNOWN                  :
EDIRU: 01287:pRuleParms->szReceiverTPName:CB3JPN                 :
EDIRU: 01288:pRuleParms->szProcessName::
EDIRU: 01289:pRuleParms->szSenderTypeFlag::
EDIRU: 01290:pRuleParms->szReceiverTypeFlag::
EDIRU: 01291:pRuleParms->szChgSndrId:                            :
EDIRU: 01292:pRuleParms->szChgRcvrId:                            :
EDIRU: 01293:pRuleParms->szChgSndrQ1:                            :
EDIRU: 01294:pRuleParms->szChgRcvrQ1:                            :
EDIRU: 01295:pRuleParms->szAppSender:                            :
EDIRU: 01296:pRuleParms->szAppReceiver:                          :
EDIRU: 01297:pRuleParms->szAppPassword:                          :
EDIRU: 01298:pRuleParms->iSenderUnknown:0:
EDIRU: 01299:pRuleParms->iReceiverUnknown:0:
EDIRU: 01300:pRuleParms->iSenderAny:0:
EDIRU: 01301:pRuleParms->iReceiverAny:0:
EDIRU: 01302:pRuleParms->iBestScore:0:
EDIRU: Enter: LookupTP
EDIRU: Enter: GetTradProfRecord
EDIRU: Searching for TP record by nickname
EDIRU: 01314:tradProf->szTPNICKN:UNKNOWN                          :
EDIRU: 01315:tradProf->szTPTYPE::
EDIRU: 01316:tradProf->szPROCESS::
EDIRU: 01317:tradProf->szINTID::
EDIRU: 01318:tradProf->szINTQUAL::
EDIRU: 01319:tradProf->szSEGMENTED::

```



Rules


```
edidtrc.out2 - WordPad
File Edit View Insert Format Help
[Icons]
AMMNODE: new element index: 0
AMMNODE: Exit CreateElementAsPosition
EDIUTRTN: Source Element Name: , Element Type: V, Value: 20031006170352100000, Value Type: CHAR
EDIUTOPC: Target Element Name: , Element Type: V, Value: 20031006170352100000, Value Type: CHAR
EDIUTDTC: Opcode: FFFF000B, Offset: 00000904
0000:0B00FFFF 10000000 00000000 00000000 |..ÿÿ.....|
EDIUTDTC: Opcode: FFFF0006, Offset: 00000914
0000:0600FFFF 10000000 00000000 00000000 |..ÿÿ.....|
EDIUTDTC: Opcode: FFFF0001, Offset: 00000924
0000:0100FFFF 24000100 00000000 00000000 |..ÿÿ$.....|
0010:01000000 21000000 00000000 00000000 |...!.....|
0020:B80B0000 |...|
EDIUTDTC: Opcode: FFFF0001, Offset: 00000948
0000:0100FFFF 24000100 00000000 00000000 |..ÿÿ$.....|
0010:01000000 22000000 00000000 00000000 |..."......|
0020:E0090000 |à ..|
EDIUTDTC: Opcode: FFFF0003, Offset: 0000096C
0000:0300FFFF 24000100 00000000 00000000 |..ÿÿ$.....|
0010:01000000 23000000 00000000 00000000 |...#......|
0020:D0090000 |Ð ..|
EDIUTDTC: Opcode: FFFF0010, Offset: 00000990
0000:1000FFFF 30000200 00000000 00000000 |..ÿÿ0.....|
0010:02000000 23000000 00000000 00000000 |...#......|
0020:01000000 23000000 00000000 00000000 |...#......|
AMMNODE: Enter CreateElementAsPosition
AMMNODE: current parent element: Process
AMMNODE: new element index: 4
AMMNODE: Enter AddAfter
AMMNODE: current element: ControlNumber
AMMNODE: Exit CreateElementAsPosition
AMMNODE: Enter CreateElementAsPosition
AMMNODE: current parent element: DateReference
AMMNODE: new element index: 0
AMMNODE: Exit CreateElementAsPosition
AMMNODE: Enter CreateElementAsPosition
AMMNODE: current parent element: Type
AMMNODE: new element index: 0
```



Transformation,
Control String Interpreter

For Help, press F1

Windows taskbar showing the Start button, application icons, a search bar with 'Address' and 'Go' fields, a volume icon, a 100% zoom level, and a system tray with the date 'Thursday 1/13/2005' and time '11:59 AM'.



Checkpoint Trace

H177

File Edit View Communication Actions Window Help

Display Filter View Print Options Help

SDSF OUTPUT DISPLAY KANDELBP JOB04112 DSID 110 LINE 0 COLUMNS 02- 81
 COMMAND INPUT ==> SCROLL ==> CSR

***** TOP OF DATA *****

CheckPoint	2005/01/12	21:50:49	Heap	Used: 36211800	ISA	Count: 1	File: EDIEVX12	Lin
CheckPoint	2005/01/12	21:50:51	Heap	Used: 36216272	Grp	Count: 1	File: EDIEVX12	Lin
CheckPoint	2005/01/12	21:50:51	Heap	Used: 36219008	Trx	Count: 1	File: EDIEVX12	Lin
CheckPoint	2005/01/12	21:50:52	Heap	Used: 36499480	DTC	Count: 1	File: EDIUTDTC	Lin
CheckPoint	2005/01/12	21:50:53	Heap	Used: 36637920	DTC	Count: 1	File: EDIUTDTC	Lin
CheckPoint	2005/01/12	21:51:29	Heap	Used: 39007152	Trx	Count: 101	File: EDIEVX12	L
CheckPoint	2005/01/12	21:51:31	Heap	Used: 39067896	DTC	Count: 101	File: EDIUTDTC	L
CheckPoint	2005/01/12	21:52:14	Heap	Used: 40629688	Trx	Count: 201	File: EDIEVX12	L
CheckPoint	2005/01/12	21:52:16	Heap	Used: 40684744	DTC	Count: 201	File: EDIUTDTC	L
CheckPoint	2005/01/12	21:52:47	Heap	Used: 41759608	Trx	Count: 301	File: EDIEVX12	L
CheckPoint	2005/01/12	21:52:48	Heap	Used: 41813360	DTC	Count: 301	File: EDIUTDTC	L
CheckPoint	2005/01/12	21:53:19	Heap	Used: 42895104	Trx	Count: 401	File: EDIEVX12	L
CheckPoint	2005/01/12	21:53:21	Heap	Used: 42966720	DTC	Count: 401	File: EDIUTDTC	L
CheckPoint	2005/01/12	21:53:51	Heap	Used: 44488216	Trx	Count: 501	File: EDIEVX12	L
CheckPoint	2005/01/12	21:53:58	Heap	Used: 44618904	DTC	Count: 501	File: EDIUTDTC	L
CheckPoint	2005/01/12	21:54:43	Heap	Used: 45768864	Trx	Count: 601	File: EDIEVX12	L
CheckPoint	2005/01/12	21:54:46	Heap	Used: 45854512	DTC	Count: 601	File: EDIUTDTC	L

F1=HELP F2=SPLIT F3=END F4=RETURN F5=IFIND F6=RETRIEVE
 F7=UP F8=DOWN F9=SWAP F10=LEFT F11=RIGHT F12=RETRIEVE

MR b 04/021

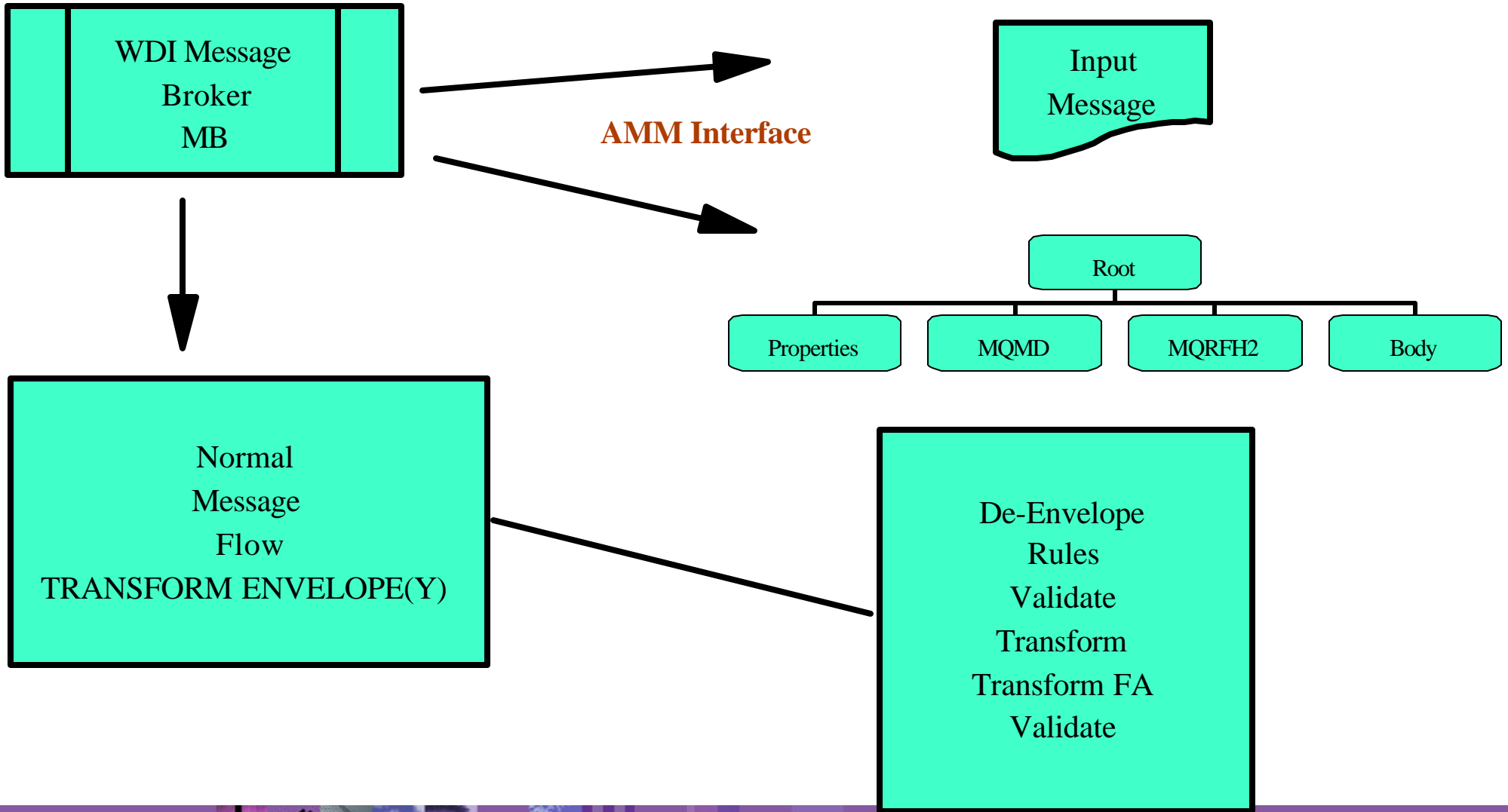
Connected to remote server/host 158.98.254.17 using lu/pool H177I251 and port 23

start [Taskbar icons] Address [Go] EN 100% [System tray icons] 12:12 PM Thursday 1/13/2005



What does it mean?

DT Message Flow and Abstract Message Model

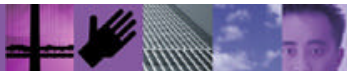




What does it mean?

Consider the DT Message Flow and Abstract Message Model

With knowledge of the Message Flow, EDI Components, and Modules, you can identify user errors, data problems, APARs, find work arounds more accurately.





Questions

