



COBOL with TAL in a HyperCube of ITP-PANORAMA

The screen shots of this presentation are
made from an application with 743,000 LOC

You will see the data in the HyperCube with

- Quality checks
- Call Hierarchy Graph
- Source Graph
- Inner Procedure Call Graph
- Dataflow Analysis
- Structure Browser
- Resource Browser



Retrieving valuable Informations out of a COBOL and TAL Applications

RA-ALL on C:\TPData\RA-ALL\HypercubeLocal - ITP Panorama V4.1.20111115 - 64 Bit

Program Selection Queries Styles Windows Help

Statements Variables Literals Modules Files SQL Defines Err-Info Start

Programs 493/493

Program 493/493

<DEFS>
<INVOKES>
AGGRKBZ-TQ-ANLNR
BKL000
BKL100
BKL200
BKL300
BKL400
BKL500
CHECK-VERPACKUNGS-...
DASLIST
FILL-TA-STATUS
FUELLE-AG-2D
FUELLE-AGANL
INIT-AGANL
INIT-ME01
INIT-ME0301
INIT-W002006-01
INIT-W002008-03
INIT-W003007-01
INIT-W004001-01
INIT-W004002-01
INIT-W004036-01
INIT-W006001-02
INIT-W006002-01
INIT-W006004-01
INIT-W006004-02
INIT-W006005-01
INIT-W006006-01
INIT-W006006-02
INIT-W006008-01
INIT-W006011-01
INIT-W006012-01
INIT-NAU5103-01
INIT-NERR-MSG

Selection

Selected Lines: 743,703

CUBE: RA-ALL - SCAN: 2013-11-12T13:30:15

DataFlow - CallPath - StructGraph

Press here to start exploring

Number of codelines by usage (All)

Usage	Count
1. DOL	368705
2. COB	261185
3. TAL	104495
4. TXT	3267
5. <MISSING>	76

Number of unused records by program (Top 10)

Program	Count
1. SOV1100	6420
2. SSMON00	487
3. UMYB001	795
4. UMYB001	779
5. SML800	721
6. URIZU01	721
7. URIZU02	717
8. SCDF900	687
9. U00701	382
10. SANV000	349

Number of unused codelines by program (Top 10)

Program	Count
1. SOV1100	12561
2. SSMON00	8339
3. SML800	8274
4. U00701	8110
5. BKL200	8115
6. BKL000	7449
7. U006001	7246
8. URIZU01	6804
9. URIZU02	6518
10. SANV000	6343

Number of unclosed cursors by program (All)

Program	Count
1. SCDF201	1

Number of unclosed files by program (Top 10)

Program	Count
1. BKL200	18
2. BKL000	17
3. SLV3900	7
4. SL00300	7
5. SLV4700	7
6. SLV3200	7
7. SUN0500	7
8. SUN4500	6
9. SUN1500	6
10. SLP0300	6

Number of SQL statements by program (Top 10)

Program	Count
1. <DEFS>	431
2. <INVOKES>	232
3. BKL200	136
4. BKL300	87
5. UDV0002	79
6. UTXT002	64
7. USQL011	61
8. USQL011A	61
9. U006013	60
10. SCDF201	58

Number of statements done with Table (Top 10)

Program	Count
1. WA00	88
2. ME00	83
3. SP0001	54
4. WA0015	52
5. WA0101	41
6. ME0001	41
7. ME0101	32
8. TA0001	31
9. WA06	28
10. SP0101	27

Number of lines by program (Top 10)

Program	Count
1. INT-ME0301	126338
2. ULP0002	67844
3. READ-WA	63061
4. READ-WA	62779
5. READ-WA	62623
6. ULL3301	625019
7. READ-WA	622435
8. READ-WA	608262
9. SUB-VERA	602873
10. UNK	55037

Number of lines by Modul (Top 10)

Modul	Count
1. DECLGENTAB...	30398
2. SPRAGL	27547
3. DVALIB1	20433
4. GRPPROOM	19178
5. U006001	15009
6. GRUPPEN	14960
7. RMV00	12818
8. RECORDS	11999
9. EXTDEC30	11172
10. EXTDECS	11172

Hypercube error messages

Category	Count
Severe Error	36
Error	44724
Warning	206
Info	1925
Good	778153

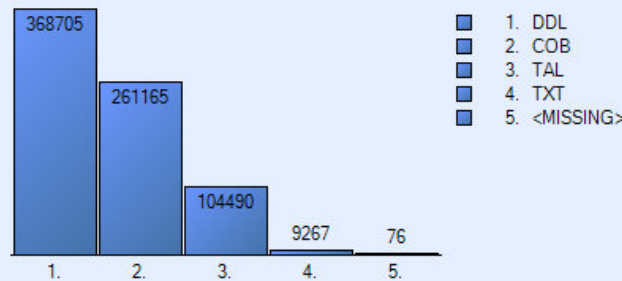
What's New Error Report Unsaved Records
User Manual Unlocked Cursor Unlocked Files
Video Tutorials CICS Report CICS Table
ITP Online Statistics & SmartLOC

Show this page on startup? Press X to close this page

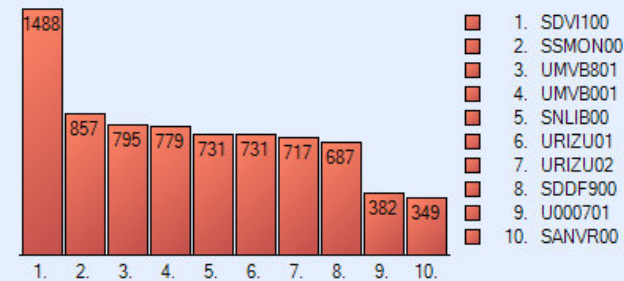


Retrievien valuable Informations out of a COBOL and TAL Application

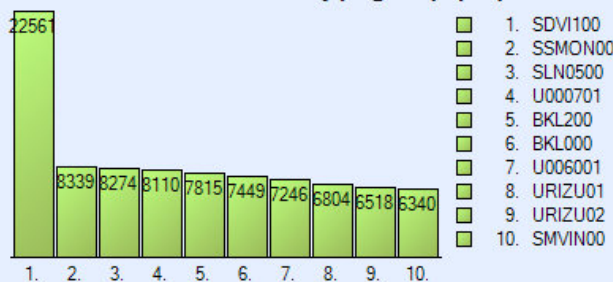
Number of codelines by usage (All)



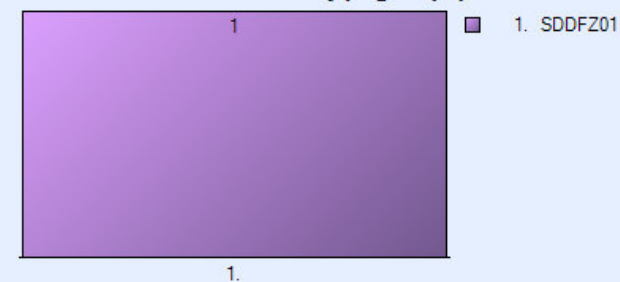
Number of unused records by program (Top 10)



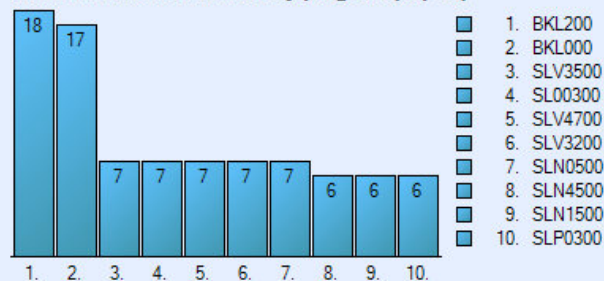
Number of unused codelines by program (Top 10)



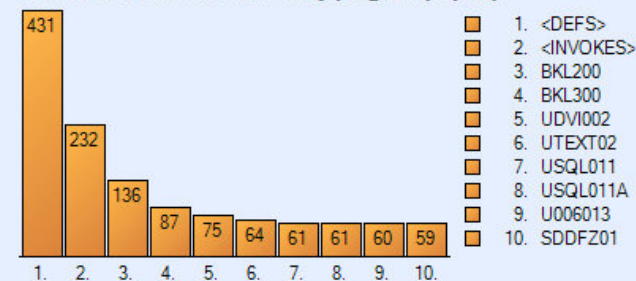
Number of unclosed cursors by program (All)



Number of unclosed files by program (Top 10)



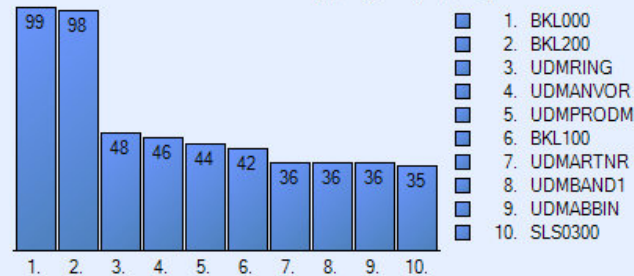
Number of SQL statements by program (Top 10)



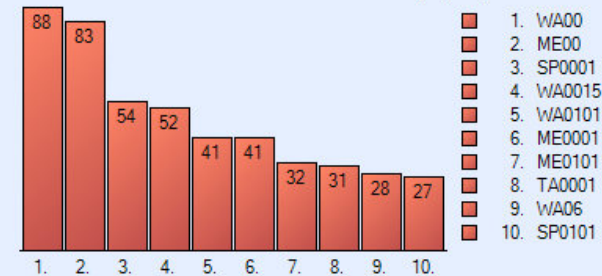


Retrievien valuable Informations out of a COBOL and TAL Application

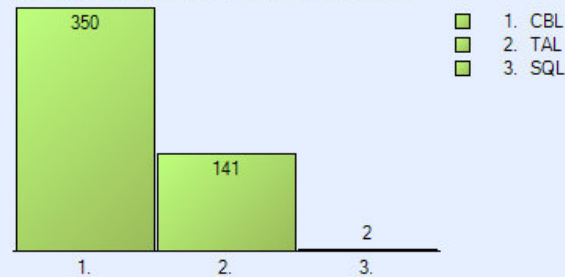
Number of FILE statements by program (Top 10)



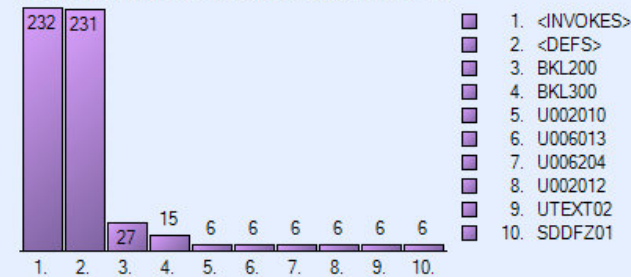
Number of statements done with Table (Top 10)



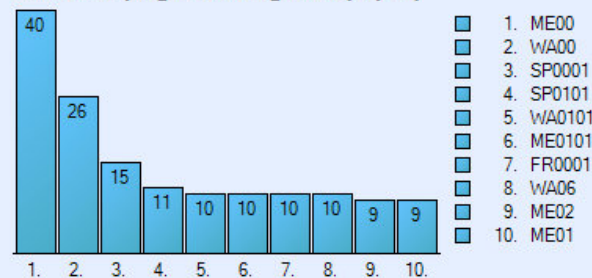
Number of programs by sourcetype (All)



Number of tables used by program (Top 10)



Number of programs using table (Top 10)



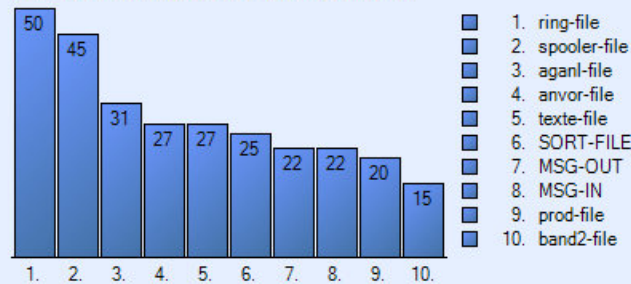
Number of files used by program (Top 10)



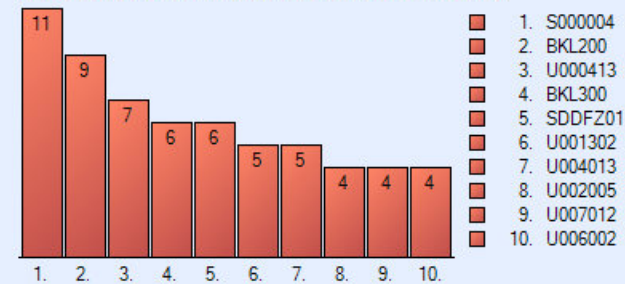


Retrievien valuable Informations out of a COBOL and TAL Application

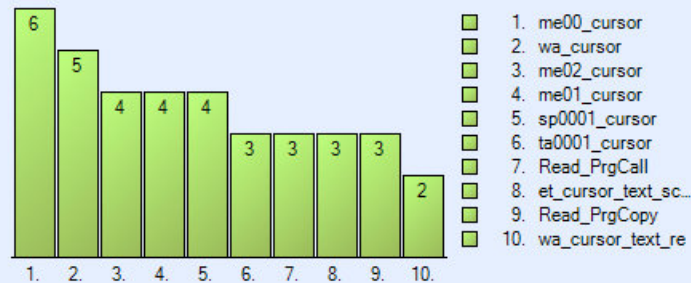
Number of programs using file (Top 10)



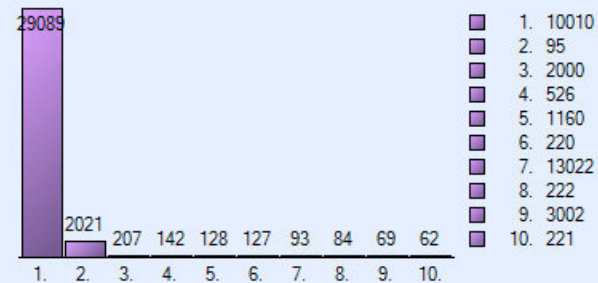
Number of cursors declared by program (Top 10)



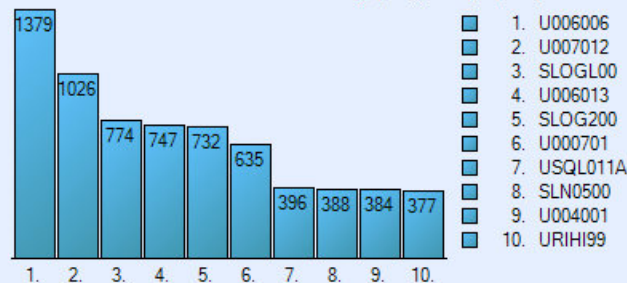
Number of programs declaring cursor (Top 10)



Number of statements by errorcode (Top 10)



Number of codelines with errors by program (Top 10)



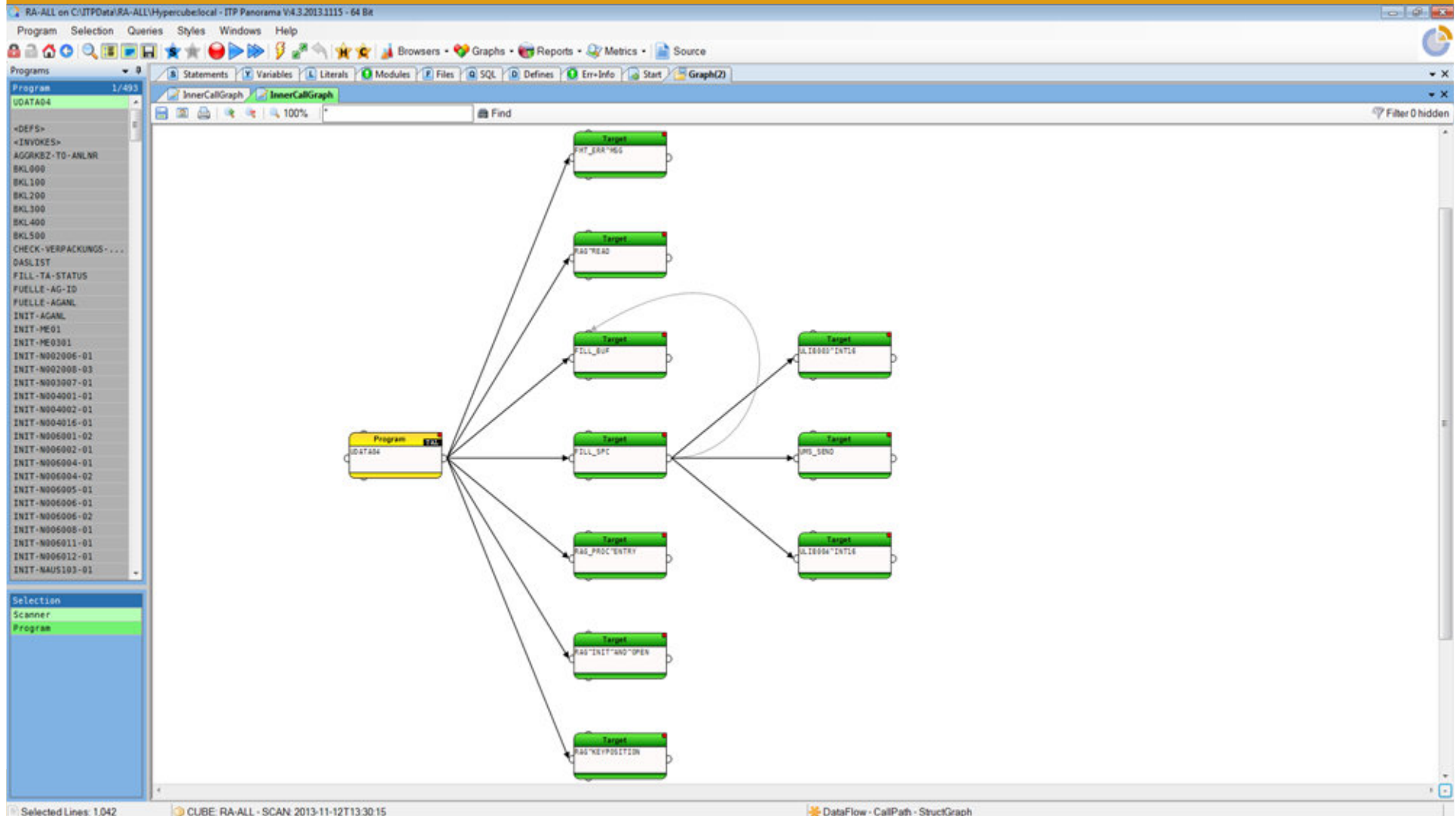


Full Graph after selecting TAL and seven Programs

The screenshot displays the RA-ALL software interface. The main window shows a call graph titled 'FullCallGraph' with a zoom level of 100%. The graph consists of several nodes representing programs and procedures, connected by lines indicating call relationships. A red arrow points to a specific node labeled 'Program' with ID 000010. The interface also includes a menu bar (Program, Selection, Queries, Styles, Windows, Help), a toolbar, and several panels: 'Programs' (listing UDATA01-07), 'Statements' (showing a list of statements with columns File, Usage, StmtID, SourceLine), and 'Selection' (with options Scanner and Program). The status bar at the bottom indicates 'Selected lines: 3.676' and 'DataFlow - CallPath - ShortGraph'.



Inner Procedure CallGraph of Program UDADT04





Usage of DDLs by the selected seven Programs

The screenshot displays the SAP IDEAS interface with several panels. The central panel, titled 'SelectedSourceGraph', shows a network diagram where nodes represent programs and edges represent DDL usage. The nodes are arranged in two columns: the left column contains seven green nodes, and the right column contains seven orange nodes. A dense web of lines connects these nodes, indicating extensive DDL usage between the programs. The top-left panel shows the 'Programs' list with seven programs selected. The top-right panel shows the 'TableIndex' table. The bottom-left panel shows the 'Selection' panel with 'Scanner' and 'Program' selected. The bottom-right panel shows the 'ExtID' table.

Module	Usage	StatID	SourceLine
TALLIB	DDL	0000000	<<<< included file >>>
TALLIB	DDL	0000006	STRING __s1[0:19] := [19*'0']
TALLIB	DDL	0000007	.. __s1[0:19] := [19*'0']
TALLIB	DDL	0000008	.. __s2[0:19] := [19*'0']
TALLIB	DDL	0000009	.. __s3[0:19] := [19*'0']
TALLIB	DDL	0000010	.. __s4[0:19] := [19*'0']
TALLIB	DDL	0000011	.. __s5[0:19] := [19*'0']
TALLIB	DDL	0000012	.. __s6[0:19] := [19*'0']
TALLIB	DDL	0000013	.. __s7[0:19] := [19*'0']
TALLIB	DDL	0000014	.. __s8[0:19] := [19*'0']
TALLIB	DDL	0000015	.. __s9[0:19] := [19*'0']
TALLIB	DDL	0000018	DEFINE _acht(a) = _s0[LEN(a)
TALLIB	DDL	0000019	.. _dreia(a) = _s3[LEN(a)
TALLIB	DDL	0000020	.. _eins(a) = _s1[LEN(a)
TALLIB	DDL	0000021	.. _funf(a) = _s5[LEN(a)
TALLIB	DDL	0000022	.. _null(a) = _s0[LEN(a)

TableIndex	Table	Index
100		
111		
121		
131		
141		
151		
161		
171		

ExtID	CodeID
CUR000001	
CUR000002	
CUR000003	
CUR000004	
CUR000005	
CUR000006	
CUR000007	
CUR000008	
CUR000009	



Variables View after selecting TAL

RA-ALL on C:\UTPData\RA-ALL\Hypercube\local - ITP Panorama V4.3.2013.1115 - 64 Bit

Program Selection Queries Styles Windows Help

Statements Variables Literals Modules Files SQL Defines Err-Info Start

Programs 141/493

Level	Symbol	Picture	Parent	SymbolType	Occurs	Of...	Length	Pa...	VarID	Pa...
<none>	LNLIB00	NAME		Code	0	0	0	0	1	
01	ABEND^PROCESS	PROC	LNLIB00	Code	1	0	0	0	2	1
02	fmtstop	STRING...		Pointer	33	0	2	0	3	
<un...>	fatal^error^log ??	<undef>	<undef>	<undef>	<un...>	<undef>	0	4		
<un...>	G_F_FMTPRT ??	<undef>	<undef>	<undef>	<un...>	<undef>	0	5		
<un...>	ft ??	<undef>	<undef>	<undef>	<un...>	<undef>	0	6		
<un...>	ext^file^no^log ??	<undef>	<undef>	<undef>	<un...>	<undef>	0	7		
<un...>	ABEND ??	<undef>	<undef>	<undef>	<un...>	<undef>	0	8		
01	ANALYSE^SYSTEM^MESSAGE	PROC	LNLIB00	Code	1	0	0	0	9	1
02	receive^buf	INT.	ANALYSE^SYSTEM^MESSAGE	Pointer	0	0	2	0	10	9
02	receive^cnt	INT	ANALYSE^SYSTEM^MESSAGE	Bin Fixed	0	2	2	0	11	9
02	pid	INT.	ANALYSE^SYSTEM^MESSAGE	Pointer	0	4	2	0	12	9
02	cpu^info	INT (32)		Bin Fix	0	0	4	0	13	
<un...>	PROCESSORSTATUS ??	<undef>	<undef>	<undef>	<un...>	<undef>	0	14		
02	num^cpus	INT		Bin Fixed	0	0	2	0	15	
02	cpu^mask	INT		Bin Fixed	0	2	2	0	16	
02	error	INT		Bin Fixed	0	4	2	0	17	
02	err^tag	INT		Bin Fixed	0	6	2	0	18	
02	status	INT		Bin Fixed	0	8	2	0	19	
02	alt	INT		Bin Fixed	0	10	2	0	20	
02	neu	INT		Bin Fixed	0	12	2	0	21	
02	i	INT		Bin Fixed	0	14	2	0	22	
02	objekt	INT.[12]		Pointer	12	16	2	0	23	
02	sys^num	INT		Bin Fixed	0	40	2	0	24	

Symbol 14025/31993 Record 4268/11142

Level	13/29	SymbolType	15/27	Picture	1111/1673	Occurs	226/229	VarID	234311/507951
01									
02		<undef>		<FUNCPTR>		-1			0
03		Bin Fix		<undef>		-187			1
04		Bin Fixed		BADDR PROC		-8			2
05		Bin Float		BADDR PROC RESIDENT EXTE...		0			3
06		Char/String		BUILTIN		1			4
07		Code		ENTRY		2			5

Offset 4374/4561 Length 427/822 Padding 1/1 Parent 4577/8292

Offset	Length	Parent
-112	-1	<undef>
-116	-240	<undef>
-122	-342	_abgl
-127	-402	_ag_a
-132	-434	_ag_q
-133	-557	_ag_t
-135	0	_ag_z

PointedBy 1/139 Redefines 147/464 EMULabel 1/1 ParentID 73397/106613 RecordID 35635/85963

PointedBy	Redefines	ParentID	RecordID
abs-anl-bis	'l'	1	1
abs-anl-von	'l'+1	9	2
absetzpunkt-kz	'l'+104	52	3
aenderungs-kz	'l'+126	59	9
ag-id	'l'+127	104	13
aggr-nr	'l'+21	110	15

Selected Lines: 141,289 CUBE: RA-ALL - SCAN: 2013-11-12T13:30:15 DataFlow - CallPath - StructGraph



Table of Variables after selecting TAL

Variables										
Level	Symbol	Picture	Parent	SymbolType	Occurs	Of...	Length	Pa...	VarID	Pa...
<none>	LNLIB00	NAME		Code	0	0	0	0	1	
01	ABEND^PROCESS	PROC	LNLIB00	Code	1	0	0	0	2	1
02	fmtstop	STRING....		Pointer	33	0	2	0	3	
<un...	fatal^error^log ??	<undef>	<undef>	<undef>		<un...	<undef>	0	4	
<un...	G_F_FMTPRT ??	<undef>	<undef>	<undef>		<un...	<undef>	0	5	
<un...	ft ??	<undef>	<undef>	<undef>		<un...	<undef>	0	6	
<un...	ext^file^no^log ??	<undef>	<undef>	<undef>		<un...	<undef>	0	7	
<un...	ABEND ??	<undef>	<undef>	<undef>		<un...	<undef>	0	8	
01	ANALYSE^SYSTEM^MESSAGE	PROC	LNLIB00	Code	1	0	0	0	9	1
02	receive^buf	INT.	ANALYSE^SYSTEM^MESSAGE	Pointer	0	0	2	0	10	9
02	receive^cnt	INT	ANALYSE^SYSTEM^MESSAGE	Bin Fixed	0	2	2	0	11	9
02	pid	INT.	ANALYSE^SYSTEM^MESSAGE	Pointer	0	4	2	0	12	9
02	cpu^info	INT(32)		Bin Fix	0	0	4	0	13	
<un...	PROCESSORSTATUS ??	<undef>	<undef>	<undef>		<un...	<undef>	0	14	
02	num^cpus	INT		Bin Fixed	0	0	2	0	15	
02	cpu^mask	INT		Bin Fixed	0	2	2	0	16	
02	error	INT		Bin Fixed	0	4	2	0	17	
02	errTag	INT		Bin Fixed	0	6	2	0	18	
02	status	INT		Bin Fixed	0	8	2	0	19	
02	alt	INT		Bin Fixed	0	10	2	0	20	
02	neu	INT		Bin Fixed	0	12	2	0	21	
02	i	INT		Bin Fixed	0	14	2	0	22	
02	objekt	INT.[12]		Pointer	12	16	2	0	23	
02	sys^num	INT		Bin Fixed	0	40	2	0	24	



Error Code 95 shows dead Code in Program SUB-STWE in the Table and the Inner Procedure CallGraph

Program Selection Queries Styles Windows Help

Statements Variables Literals Modules Files SQL Defines Err-Info Start Graph(I)

Programs 1/493

Program SUB-STWE

<DEFS>
<INVOKES>
AGGRKZ-T0-ANLNR
BKL000
BKL100
BKL200
BKL300
BKL400
BKL500
CHECK-VERPACKUNGS-...
DASLIST
FILL-TA-STATUS
FUELLE-AG-ID
FUELLE-AGANL
INIT-AGANL
INIT-ME01
INIT-ME0301
INIT-N002006-01
INIT-N002006-03
INIT-N003007-01
INIT-N004001-01
INIT-N004002-01
INIT-N004016-01
INIT-N006001-02
INIT-N006002-01
INIT-N006004-01
INIT-N006004-02
INIT-N006005-01
INIT-N006006-01
INIT-N006006-02
INIT-N006008-01
INIT-N006011-01
INIT-N006012-01
INIT-NAUS103-01

Selection
ErrorCode
Program

Error

I-EMSG95 Potentially unused code: SONSTIGE-TA-WR
I-EMSG95 Potentially unused code: SUBPRDG-NICHT-GEFUNDEN
I-EMSG95 Potentially unused code: USER-ERROR-HANDLE
I-EMSG10010 Error: Variable not in symbol table: libdt.conv.RAG-STR

InnerCallGraph

100%

Find

Filter 0 hidden

Target
SONSTIGE-TA-WR

Target
SUBPRDG-NICHT-GEFUNDEN

Program
SUB-STWE

Target
STARTPROC

Target
ENDPROC

Target
P000006

Target
P000008

Target
P000010

Target
P000012

Target
P000014

Target
P000016

3/3615 ErrorCoc 1/39 Module 2/493

Line	ErrorCoc	Module
2	95	COBLIB
100		ABBIND
220		ADD-DEFINE
221		AGIDKON
222		ALDAT
255		ANBES
320		ANLAGEN
333		ANLCOM
340		ANVOR
391		ARDECS
394		ARTAL
404		AUSKUNFT
508		BAND
514		BASDEF
517		BATLIB



SQL Table in TAL Program SAUDA00 displayed in the Resource Browser

RA-ALL on C:\NTPData\RA-ALL\Hypercube\local - ITP Panorama V.4.3.2013.1115 - 64 Bit

Program Selection Queries Styles Windows Help

Statements Variables Literals Modules Files SQL Defines Err-Info Start Browser(1)

Programs 1/493

Program SAUDA00

<DEFS>
<INVOKES>
AGGRKBZ - TO - ANLNR
BKL000
BKL100
BKL200
BKL300
BKL400
BKL500
CHECK - VERPACKUNGS - ...
DASLIST
FILL - TA - STATUS
FUELLE - AG - ID
FUELLE - AGANL
INIT - AGANL
INIT - ME01
INIT - ME0301
INIT - N002006 - 01
INIT - N002008 - 03
INIT - N003007 - 01
INIT - N004001 - 01
INIT - N004002 - 01
INIT - N004016 - 01
INIT - N006001 - 02
INIT - N006002 - 01
INIT - N006004 - 01
INIT - N006004 - 02
INIT - N006005 - 01
INIT - N006006 - 01
INIT - N006006 - 02
INIT - N006008 - 01
INIT - N006011 - 01
INIT - N006012 - 01
INIT - NAUS103 - 01

Selection
ExtID
Program

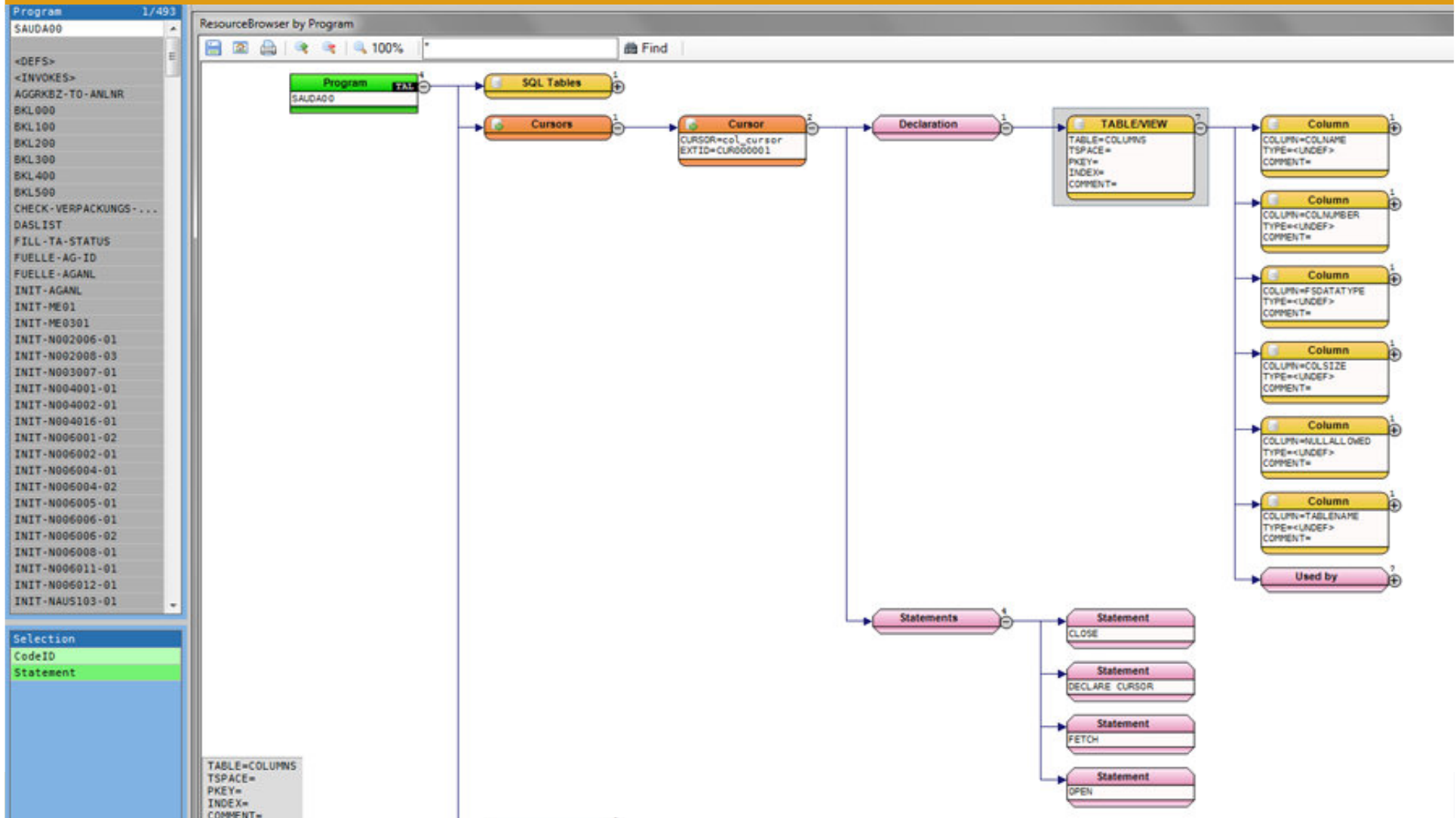
ResourceBrowser by Program

100% Find

```
graph LR
    P1[Program SAUDA00] --> ST[SQL Tables]
    ST --> TV["TABLE/VIEW  
TABLE=COLUMNS  
TSPACE=  
PKEY=  
INDEX=  
COMMENT="]
    TV --> C1["Column  
COLUMN=COLNAME  
TYPE=<UNDEF>  
COMMENT="]
    TV --> C2["Column  
COLUMN=COLNUMBER  
TYPE=<UNDEF>  
COMMENT="]
    TV --> C3["Column  
COLUMN=FSDATATYPE  
TYPE=<UNDEF>  
COMMENT="]
    TV --> C4["Column  
COLUMN=COLSIZE  
TYPE=<UNDEF>  
COMMENT="]
    TV --> C5["Column  
COLUMN=NULLALLOWED  
TYPE=<UNDEF>  
COMMENT="]
    TV --> U[Used by]
    TV --> S[Statements]
    U --> P2[Program SAUDA00]
    U --> P3[Program USOLC01]
    S --> STMT["Statement  
DECLARE CURSOR"]
```

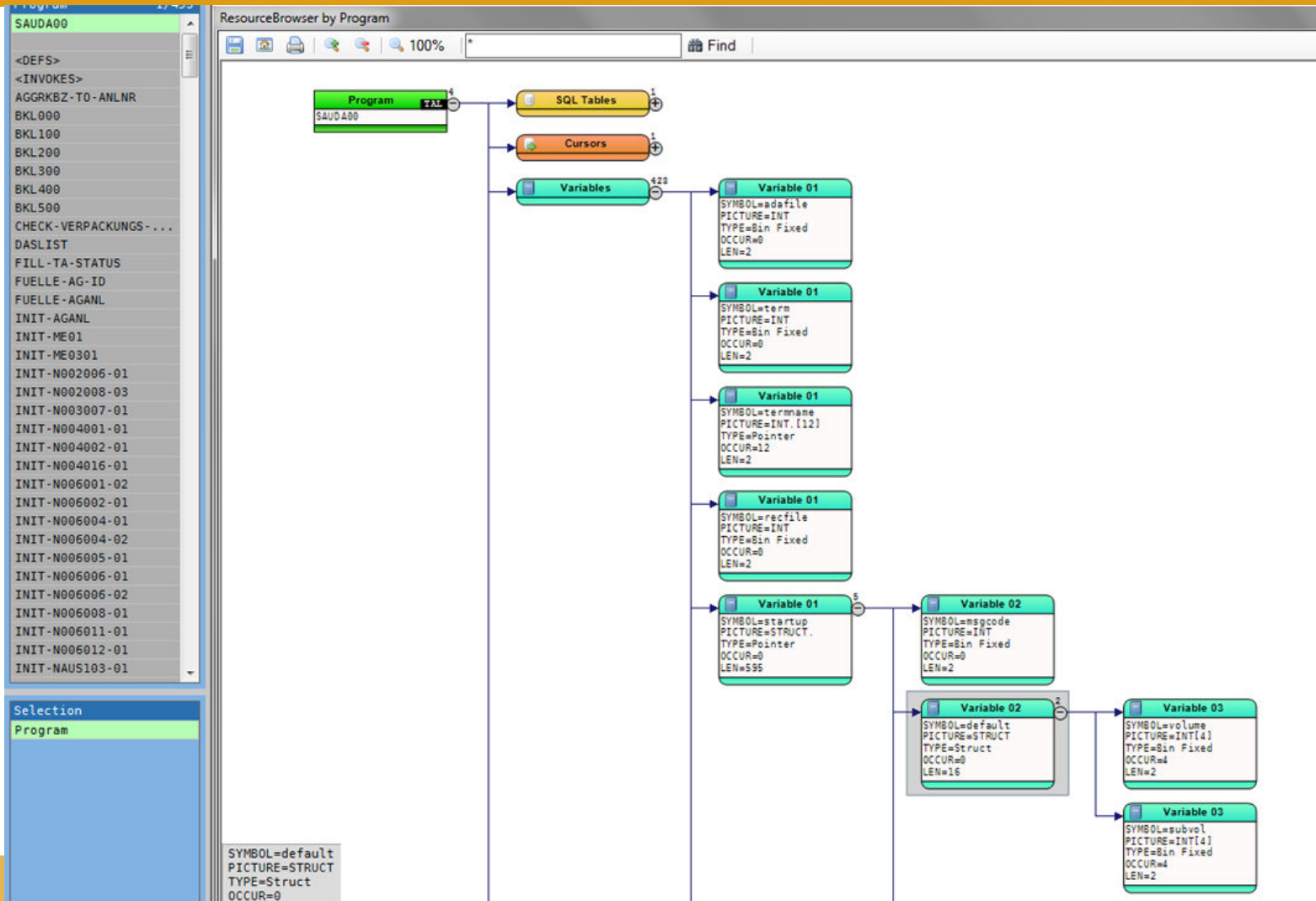


Cursor in TAL Program SAUDA00 displayed in the Resource Browser



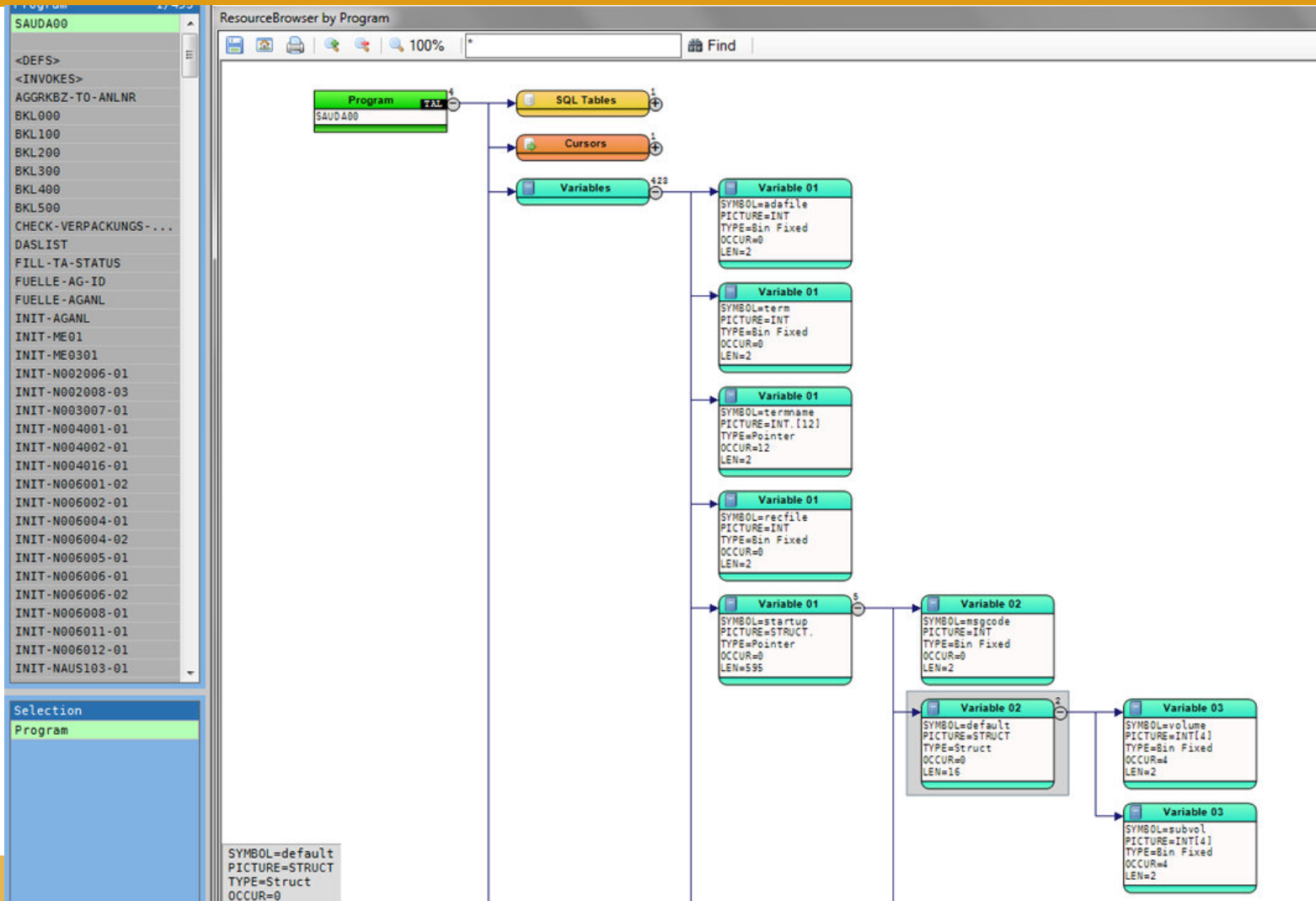


Variables in TAL Program SAUDA00 displayed in the Resource Browser



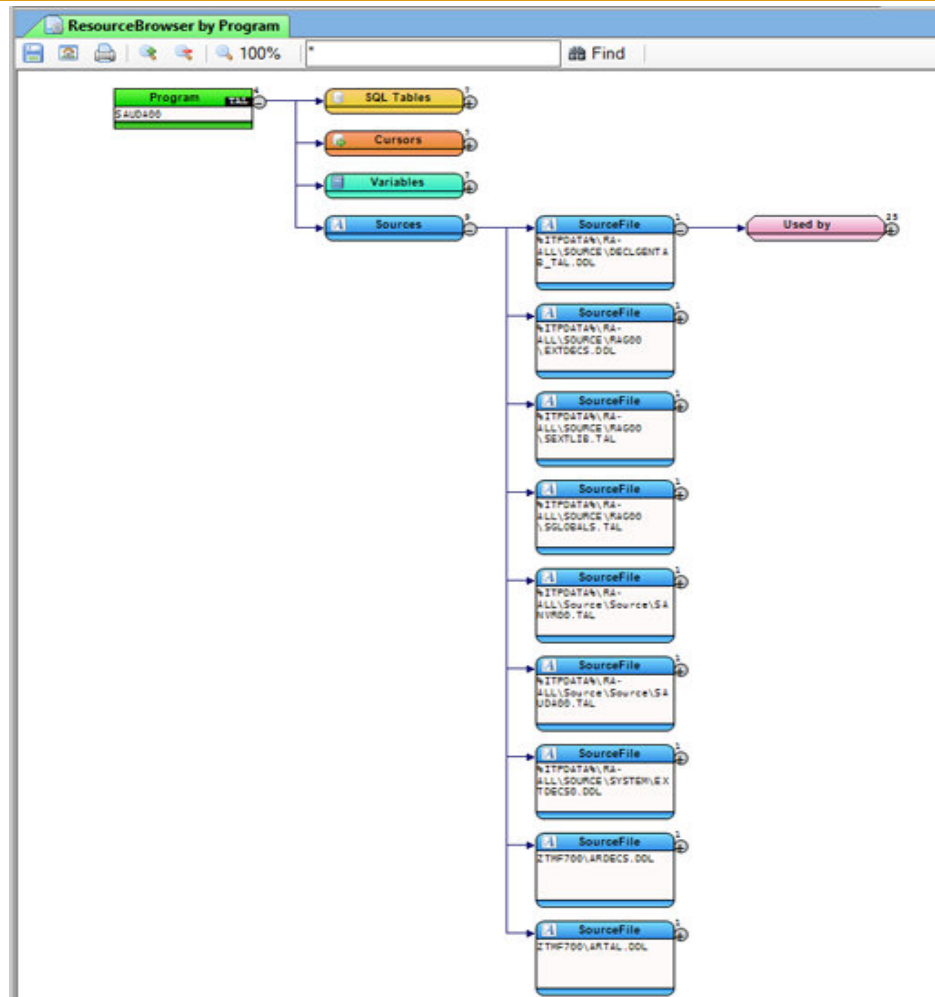


Variables in TAL Program SAUDA00 displayed in the Resource Browser



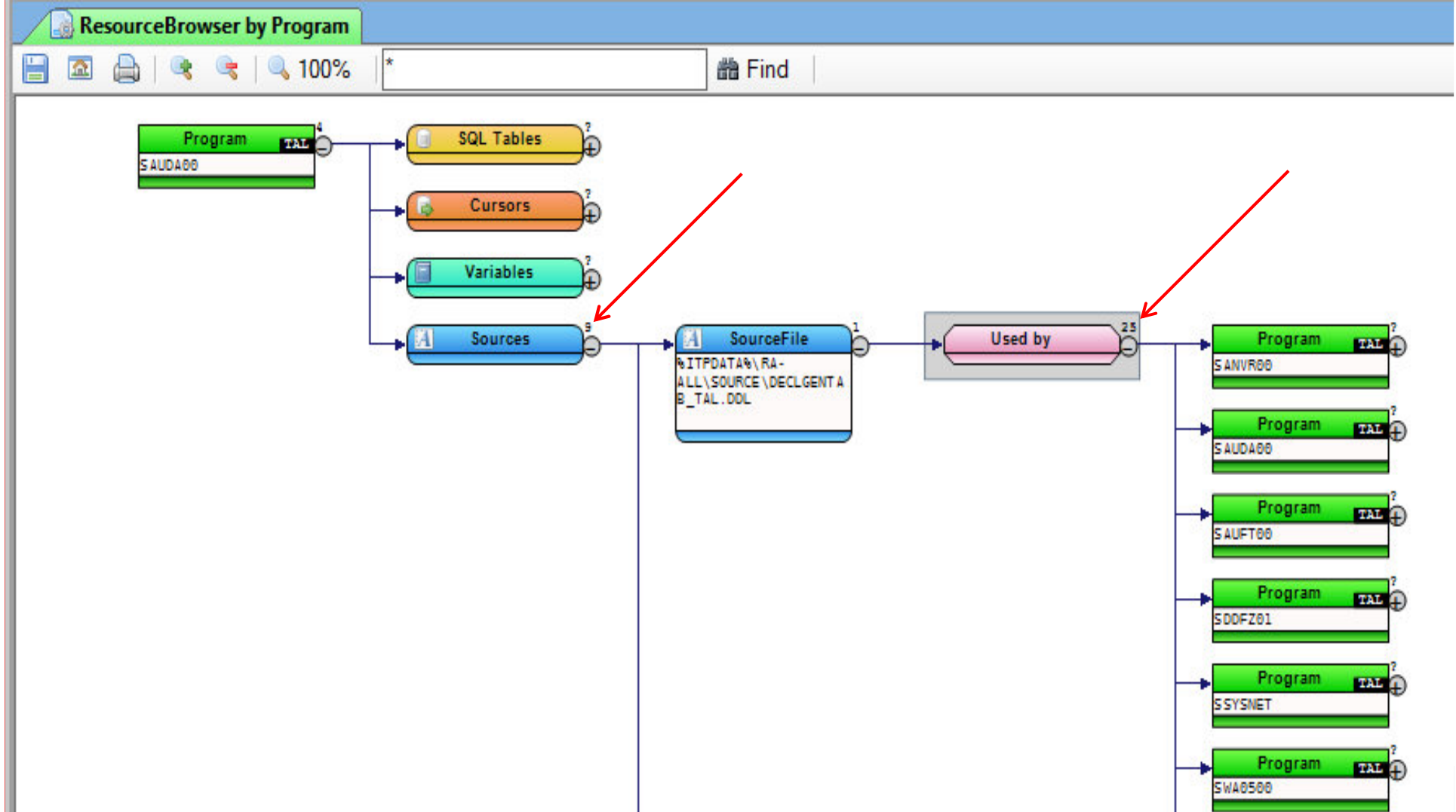


Physical Files of which TAL Program SAUDA00 was scanned





The DDL that was built from nine Physical File is used by 25 Programs





Please send me a mail to set up a free
Webinar for NonStop COBOL with TAL.

Juergen.Overhoff@itp-panorama.com