

Fault Analyzer

Grundlagen

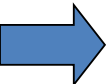
cps4it

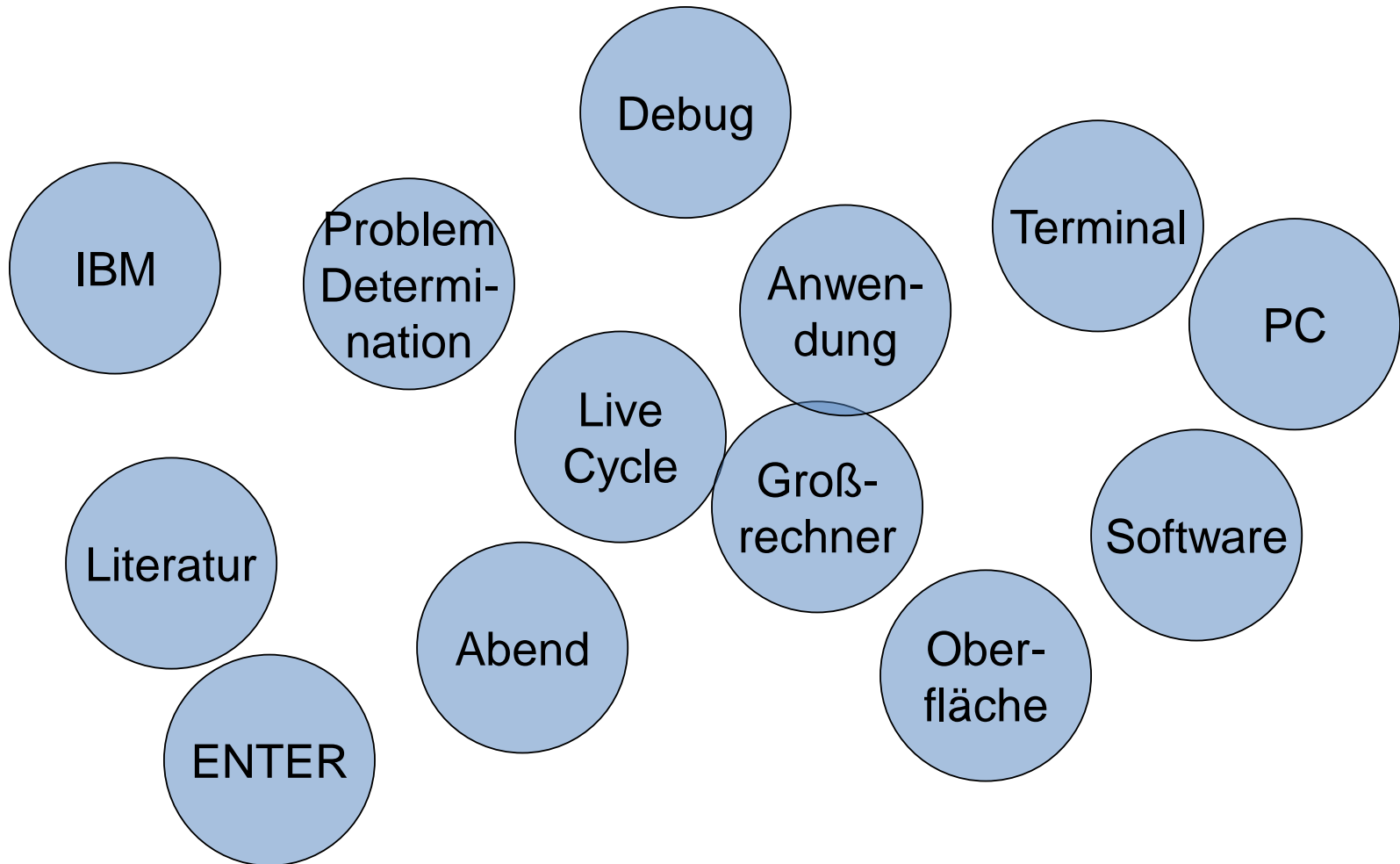
consulting, projektmanagement und seminare für die informationstechnologie

Ralf Seidler, Stromberger Straße 36A, 55411 Bingen

Fon: +49-6721-992611, Fax: +49-6721-992613, Mail: ralf.seidler@cps4it.de

Internet: <http://www.cps4it.de>

-
- 
- A blue arrow pointing to the right, highlighting the first item in the list.
- Einführung und Überblick
 - Exkurs in die Theorie
 - Produktüberblick
 - Realtime Analysis
 - Online Interface
 - Interactive Reanalysis / Batch Reanalysis
 - CICS / DB2 / IMS
 - Compileliste bereitstellen
 - Optionen und weitere Tipps
 - Zusammenfassung – Diskussion – Austausch



- Fault Analyzer – Version 12 Release 1
User's Guide and Reference
- Fault Analyzer – Version 11 Release 1
User's Guide and Reference
- Bookmanager im Hause (soweit verfügbar)
- (z)Wiki im Hause (soweit verfügbar)
- <http://www-01.ibm.com/software/awdtools/faultanalyzer/>
> Product Library
- <http://publib.boulder.ibm.com/infocenter/ieduasst/stgv1r0/index.jsp> (e-based-Training)
Hinweis: Teile der Folien sind Extrakte aus diesen Unterlagen!!!

Produkte von IBM / gleiche Produktfamilie

- z/OS Problem Determination Tools mit
 - Application Performance Analyzer for z/OS
 - Debug Tool for z/OS
 - Fault Analyzer for z/OS
 - File Manager for z/OS
 - Workload Simulator for z/OS and OS/390
- Einstiegsseite:
 - <http://www-01.ibm.com/software/awdtools/deployment/>

- seit wenigen Jahren auf dem Markt (2000)
- klare Ansage an Mitbewerber: wir können auch
- DUMP-Output formatieren zum einfachen Lesen
- Zielumgebung Großrechner
- Zielgruppe Anwendungsentwicklung
- weitere Zielrichtungen / Umgebungen
 - Eclipse
 - RD/z

- Informationen auf Client verfügbar machen
 - Plug-In für Eclipse / RD/z (!!)
 - Zugang vom Browser auf Dumps

die letzten Releases

- Release 12.1 GA: 2012 – Mai
- Release 11.1 GA: 2011 – November
- Release 10.1 GA: 2009 – Dezember
- Release 9.1 GA: 2008 – Oktober
- Release 8.1 GA: 2007 – September
- Release 7.1 GA: 2006 – September
- Release 6.1 GA: 2005 – Mai

Neuerungen – Auszüge (1)

- Rel 6.1
 - Filtern Programmnamen
 - Möglichkeiten für Userexits erweitert
 - Informationen zum Webinterface
- Rel 7.1
 - MTRACE
 - In ISPF Aufruf per Linecommand
 - Sidefiles für PL/1

Neuerungen – Auszüge (2)

- Rel 8.1
 - FCB ausführlicher
 - Duplikate unterdrücken als Auswahl
 - Sysplex-Fähigkeit
- Rel 9.1
 - 64-bit-Unterstützung
 - SHOW-Command
 - Storage-Anzeige komfortabler
 - Lookup-Command außerhalb FA
 - Java wird unterstützt

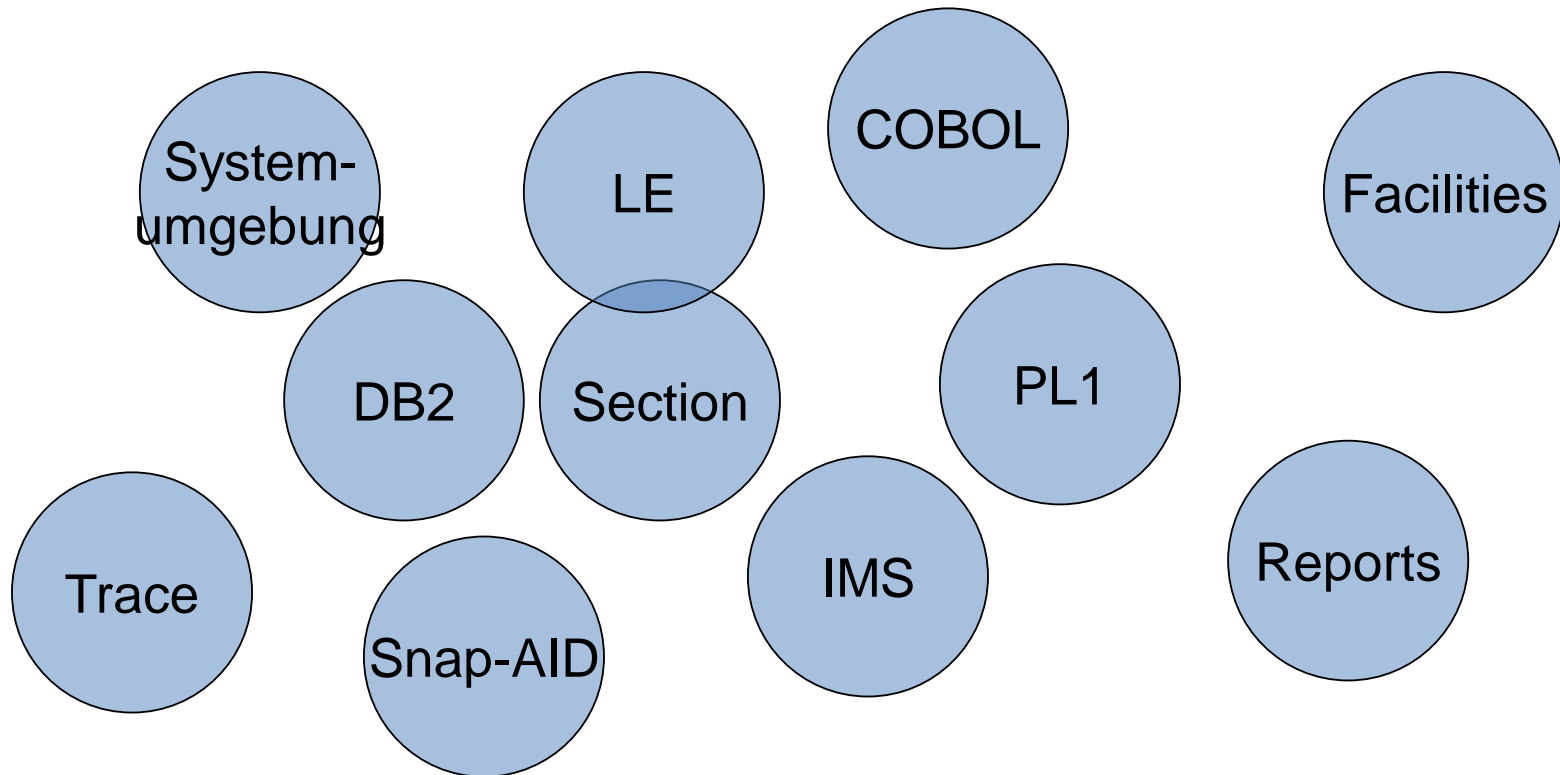
Neuerungen – Auszüge (3)

- Rel 10.1
 - Viel Optik
 - DWARF statt Sidefile
 - Plugin für Eclipse
 - Java Verbesserungen
- Rel 11.1
 - hm – wenig brauchbar Neues für Entwickler
- Rel 12.1
 - hm ;-)
 - History
 - Eclipse



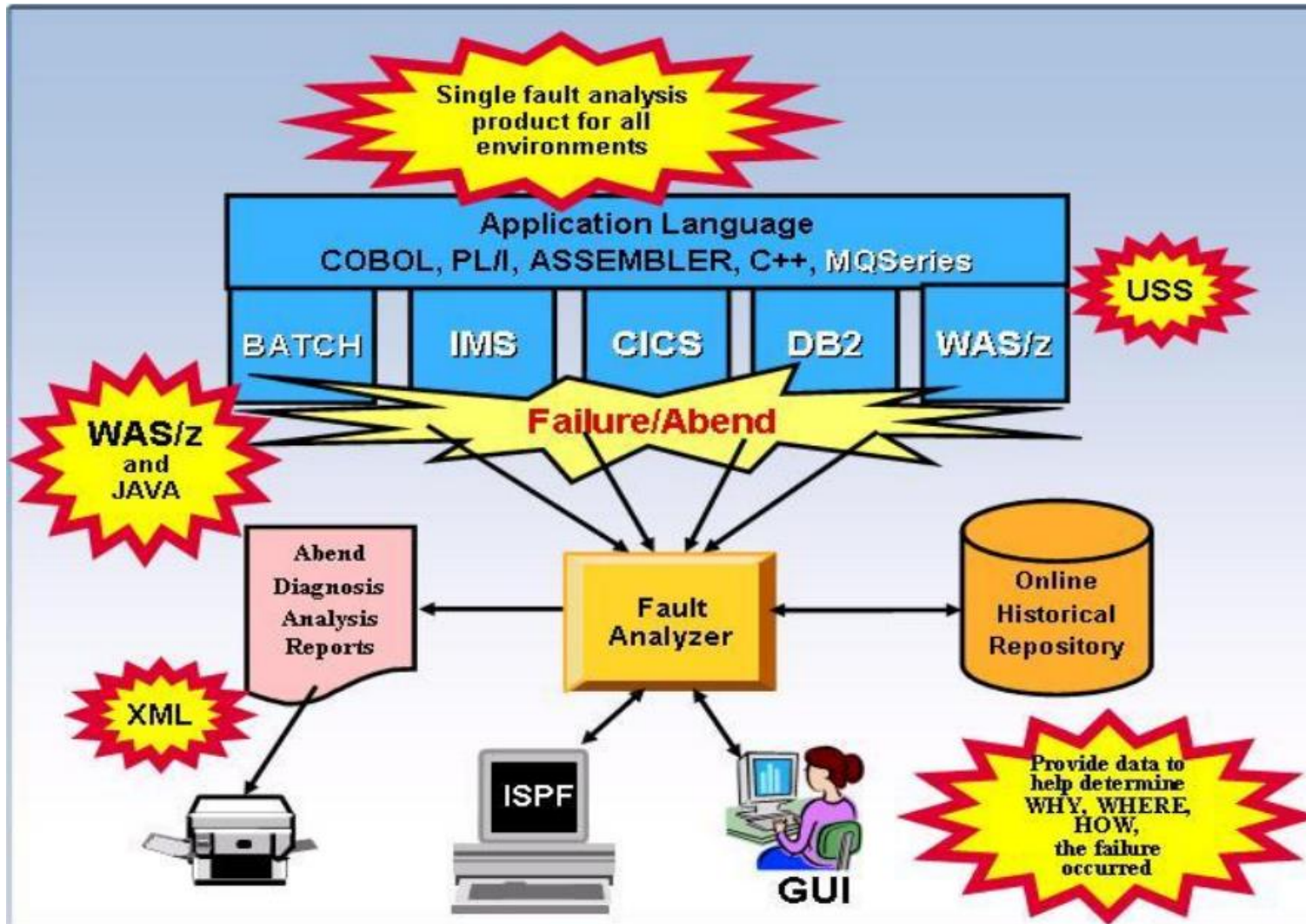
-
- Einführung und Überblick
 - ➔ • Exkurs in die Theorie
 - ➔ • Produktüberblick
 - Realtime Analysis
 - Online Interface
 - Interactive Reanalysis / Batch Reanalysis
 - CICS / DB2 / IMS
 - Compileliste bereitstellen
 - Optionen und weitere Tipps
 - Zusammenfassung – Diskussion – Austausch

Begriffe

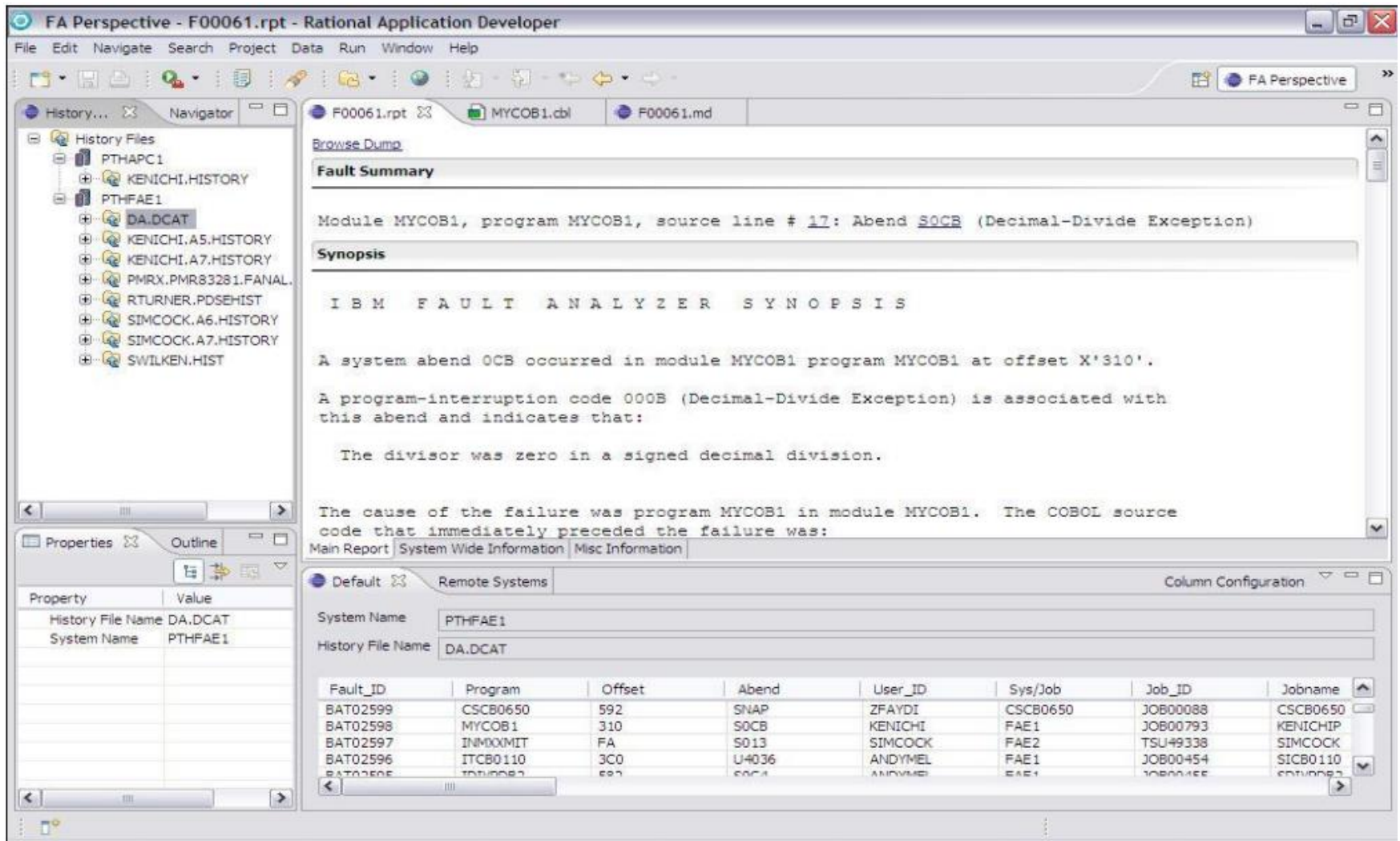


Produktüberblick

Ein büschen Werbung – 1 ;-)



Ein büschen Werbung – 2 ;-)

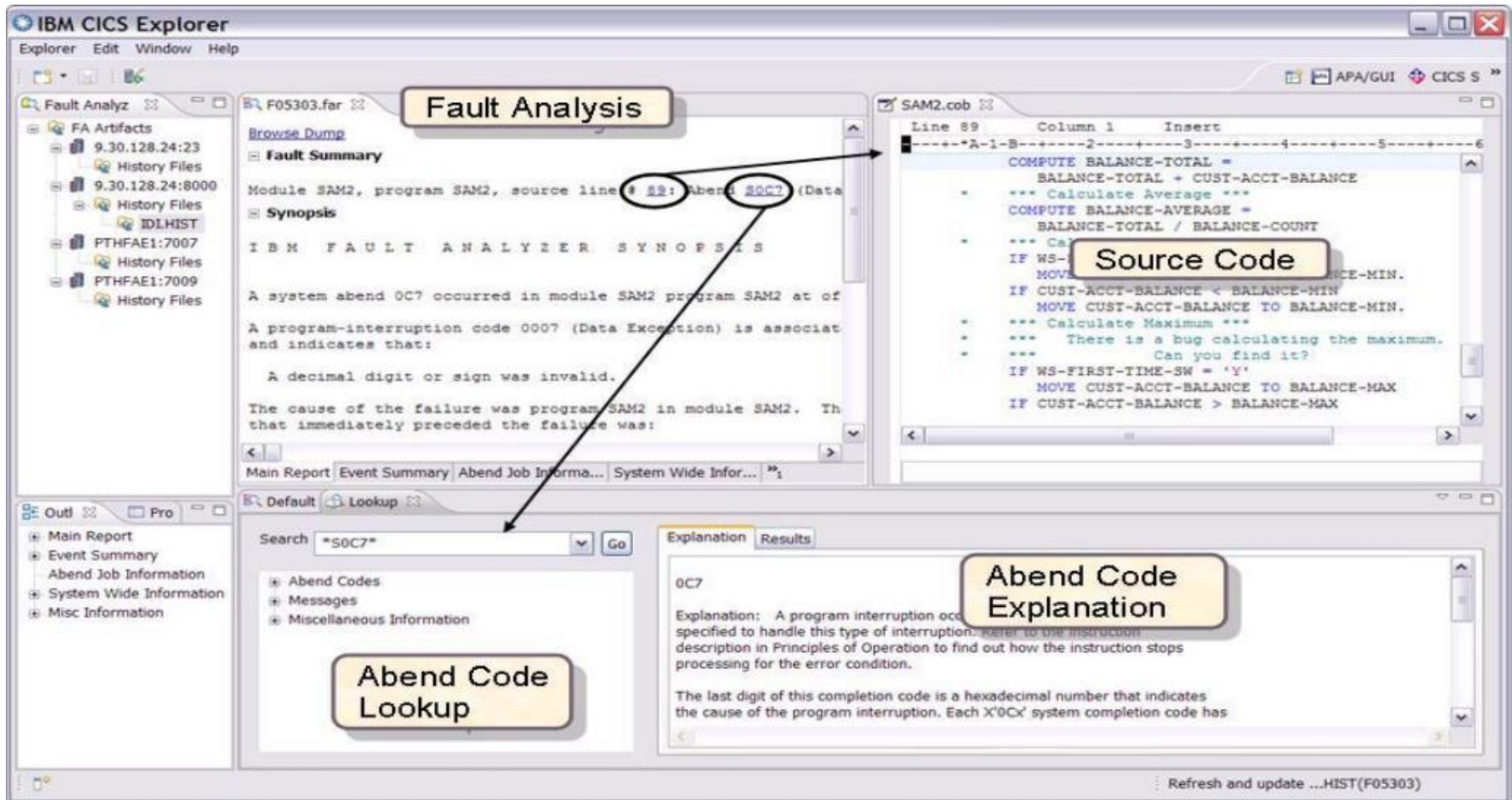


The screenshot shows the Rational Application Developer interface with the following components:

- History Files:** A tree view on the left showing a hierarchy of history files, with DA.DCAT selected under PTHFAE1.
- Properties:** A table below the history files showing the selected file's properties.
- Properties Table:**

Property	Value
History File Name	DA.DCAT
System Name	PTHFAE1
- Main Report:** The central pane displays a fault summary for MYCOB1, including a synopsis and a table of recent faults.
- Table:**

Fault_ID	Program	Offset	Abend	User_ID	Sys/Job	Job_ID	Jobname
BAT02599	CSCB0650	592	SNAP	ZFAYDI	CSCB0650	JOB00088	CSCB0650
BAT02598	MYCOB1	310	S0CB	KENICHI	FAE1	JOB00793	KENICHIP
BAT02597	INMXXMIT	FA	S013	SIMCOCK	FAE2	TSU49338	SIMCOCK
BAT02596	ITCB0110	3C0	U4036	ANDYMEL	FAE1	JOB00454	SICB0110
BAT02595	ITCB0110	607	S0C4	ANDYMEL	FAE1	JOB00454	ENTUR007



The screenshot displays the IBM CICS Explorer interface with three main components highlighted by callouts:

- Fault Analysis:** Shows a fault summary for module SAM2, program SAM2, source line 82: Abend S0C7 (Data Exception). The synopsis states: "A system abend 0C7 occurred in module SAM2 program SAM2 at of A program-interruption code 0007 (Data Exception) is associated and indicates that: A decimal digit or sign was invalid. The cause of the failure was program SAM2 in module SAM2. That immediately preceded the failure was:"
- Source Code:** Shows the source code for SAM2.cob, line 89, column 1, insert. The code includes:

```
COMPUTE BALANCE-TOTAL =  
BALANCE-TOTAL + CUST-ACCT-BALANCE  
*** Calculate Average ***  
COMPUTE BALANCE-AVERAGE =  
BALANCE-TOTAL / BALANCE-COUNT  
*** Ca  
IF WS-  
MOVE  
IF CUST-ACCT-BALANCE < BALANCE-MIN  
MOVE CUST-ACCT-BALANCE TO BALANCE-MIN.  
*** Calculate Maximum ***  
*** There is a bug calculating the maximum.  
*** Can you find it?  
IF WS-FIRST-TIME-SW = 'Y'  
MOVE CUST-ACCT-BALANCE TO BALANCE-MAX  
IF CUST-ACCT-BALANCE > BALANCE-MAX
```
- Abend Code Lookup:** Shows a search for "*S0C7*" with results for "0C7". The explanation states: "A program interruption occurred. Refer to the instruction description in Principles of Operation to find out how the instruction stops processing for the error condition. The last digit of this completion code is a hexadecimal number that indicates the cause of the program interruption. Each 'X'0Cx' system completion code has

Systemumgebung – 1

- COBOL
- PL1
- Assembler
- C / C++
- Java
- DB2
- IMS
- WebSphere® MQ
- WebSphere Application Server

Systemumgebung – 2

- ISPF
- Eclipse
- Browser
- Explorer for z

Prinzipien der Dump-Analyse

- Real-time analysis
 - Analyse der Dump-Informationen zum Zeitpunkt des Abbruchs
- Batch reanalysis
 - spätere / erneute Analyse mit zusätzlichen Informationen wie Compileliste, Side-File
- Interactive reanalysis
 - Analyse unter ISPF (oder auch auf dem Client) auf Basis der beim Abbruch gesammelten Informationen
 - neue Analyse anstoßen

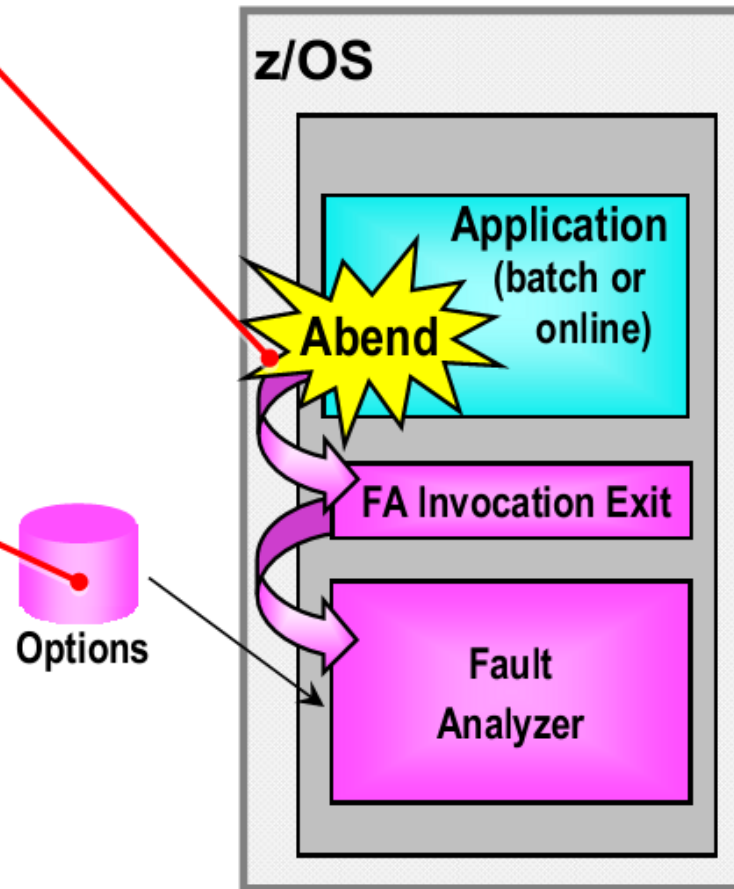


1. An application abends.
The system intercepts the abend and calls a Fault Analyzer exit.
The exit invokes FA.

2. FA reads options that control whether it will analyze the abend, how to process, and which Fault History file to use

- Installation options are specified for the system
- Options can be overridden for a job step or online region

Real-Time Analysis

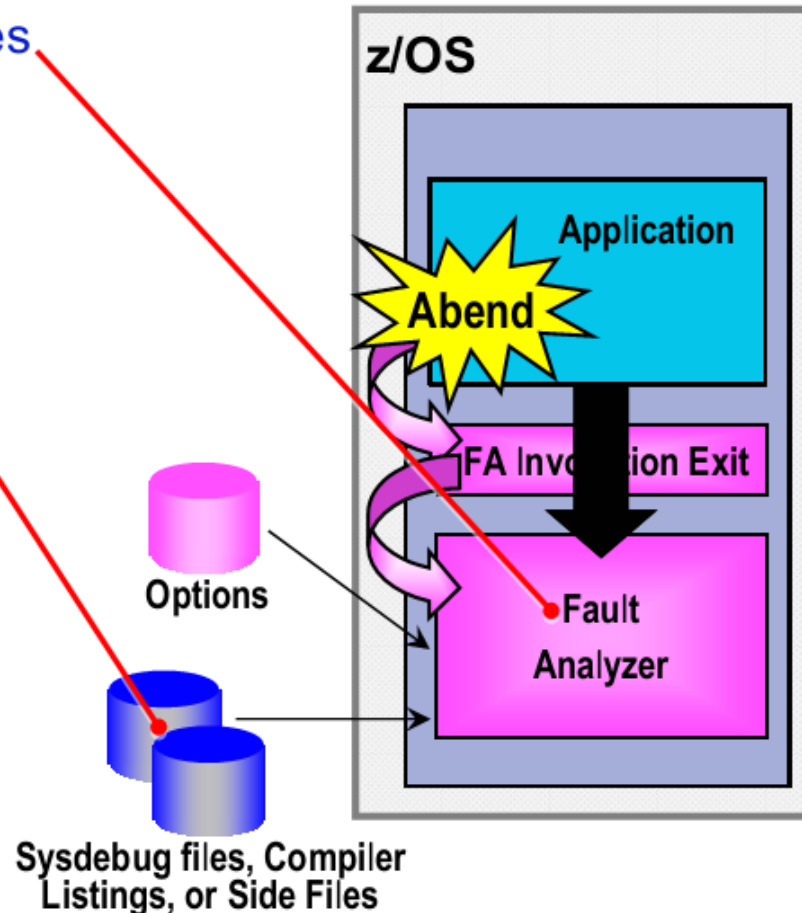


Real-Time Analysis

3. Fault Analyzer examines programs and the environment in the application address space

4. FA gets source info for application programs

- Source info can be a Sysdebug file, a side file, or a compiler listing
- Multiple data sets can be searched

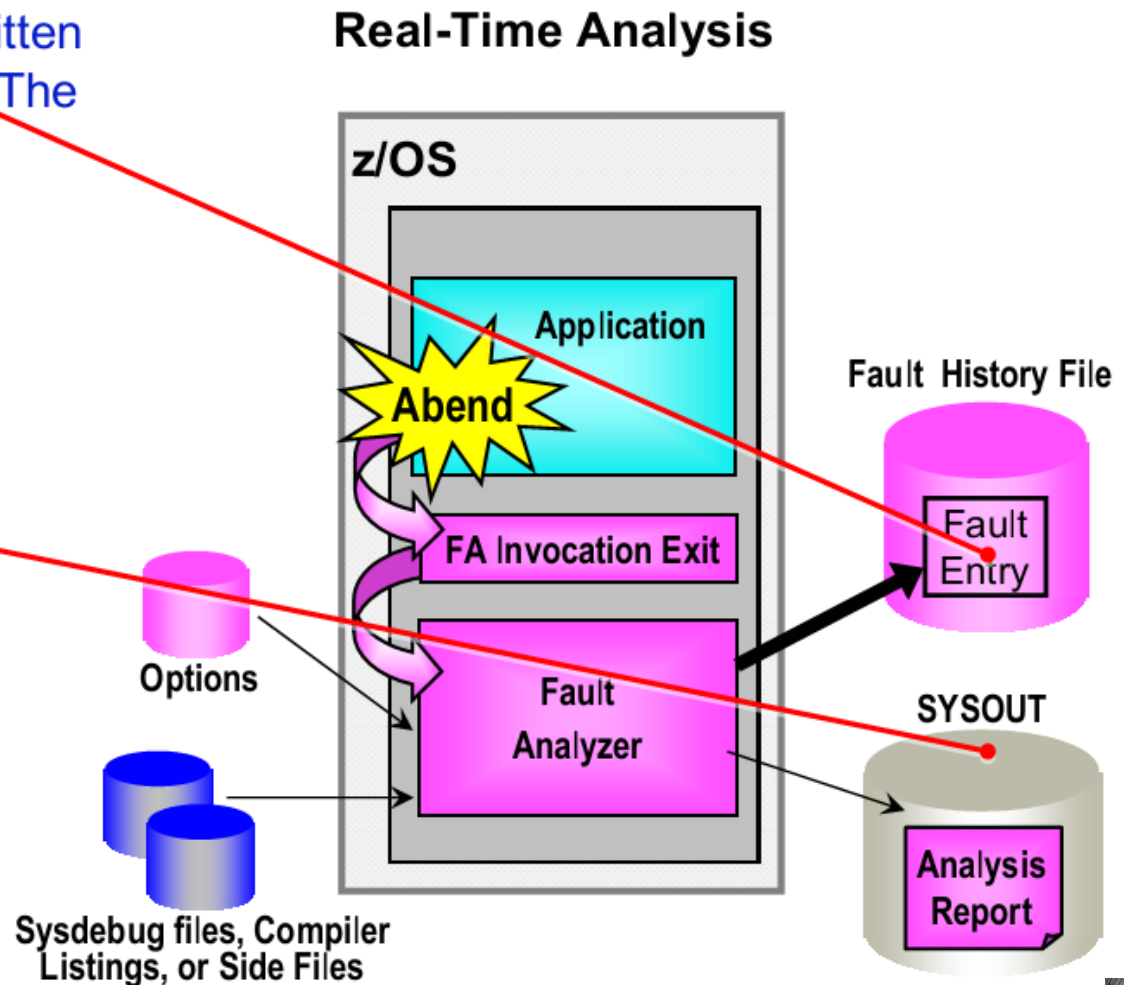


Real-time analysis – 3 (Quelle: <http://publib.boulder.ibm.com/infocenter/ieduasst/stgv1r0/index.jsp>)

5. A new Fault Entry is written to a Fault History File. The entry contains:

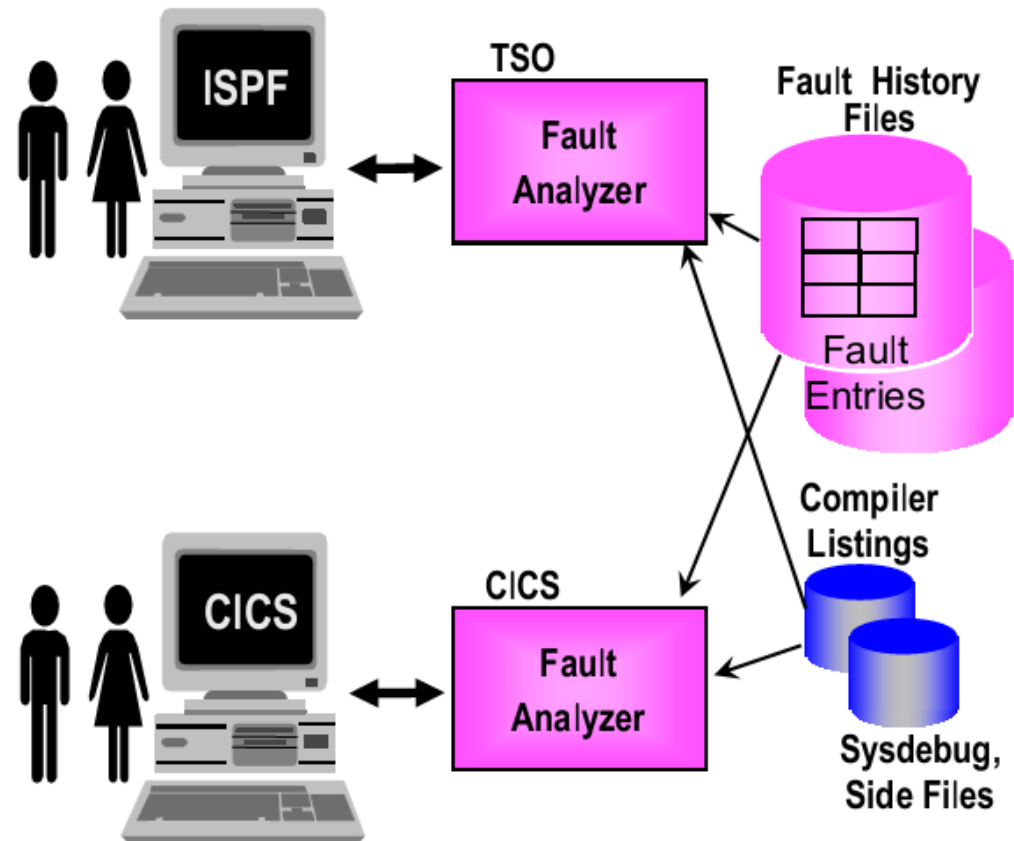
- Info about the application
- The Analysis Report
- A “mini-dump” of the application (this enables reanalysis)

6. The Analysis Report is written to SYSOUT (batch jobs only)



Das Online-Interface – 1 (Quelle: <http://publib.boulder.ibm.com/infocenter/ieduasst/stgv1r0/index.jsp>)

- The online interface is available in TSO and CICS
- Use online interface to:
 - Display a list of abends
 - View real-time reports
 - Perform reanalysis
 - Delete fault entries
- The CICS interface looks the same as the TSO interface, with minor restrictions
- Any abend can be viewed from either interface



- Available line commands are shown here

- and entered here

```
File Options View Services Help
IBM Fault Analyzer - Fault Entry List Line 1 Col 1 80
Command ==> | Scroll ==> CSR
Fault History File or View : 'FAULTANL.V8R1.HIST'
{The following line commands are available: ? (Query), V or S (View saved report), I (Interactive reanalysis), B (Batch reanalysis), D (Delete), H (Duplicate history).}

  Fault_ID Job/Tran User_ID Sys/Job Abend Job_ID Job_Type Dups Jobname
  ---
  F00161 DNET074F DNET074 DEMOMVS S0C7 JOB03440 Batch DNET074F
  F00160 DNET246S DNET246 DEMOMVS S0C7 JOB03404 Batch DNET246S
  F00159 GEN024 POT001 DEMOMVS S0C8 JOB03276 Batch GEN024
  F00158 DNET4221 DNET422 DEMOMVS S0C7 JOB03440 Batch DNET4221
  F00157 DNET422 DNET422 DEMOMVS S0C7 JOB03440 Batch DNET422
  F00156 ADPOT24X ADPOT24 DEMOMVS S0C7 JOB03440 Batch ADPOT24X
  F00155 AECLEAN KLTAYLO DEMOMVS S04E AECLEAN AECLEAN
  F00154 DNET424Z DNET424 DEMOMVS S0C7 DNET424Z DNET424Z
  F00153 DNET424Z DNET424 DEMOMVS S0C7 DNET424Z DNET424Z

F1=Help F3=Exit F4=MatchCSR F5=RptFind F6=Actions F7=Up
F8=Down F10=Left F11=Right F12=MatchALL
```

A list of abends in a fault history file

Batch and online abends may be in the same list

Der Report / die Inhalte (Quelle: <http://publib.boulder.ibm.com/infocenter/ieduasst/stgv1r0/index.jsp>)

- Synopsis and the suspected cause of a failure
 - abending program
 - active line of source code
 - active variables
- Explanation of error messages / codes
- File and Database detail
- Program details:
 - Variables / storage
 - Compile, link, load, and entry point information
- System information:
 - z/OS, CICS, DB2, IMS

```
*****
* IBM Fault Analyzer for z/OS V8R1M0 (HADG810 2007/09/19) *
* *
* Copyright IBM Corp. 2000, 2007. All rights reserved. *
*****

JOBNAME: DNET246S  SYSTEM ABEND: 0C7              DEMOMVS  2007/10/30  09:43:52

<H1> I B M  F A U L T  A N A L Y Z E R  S Y N O P S I S

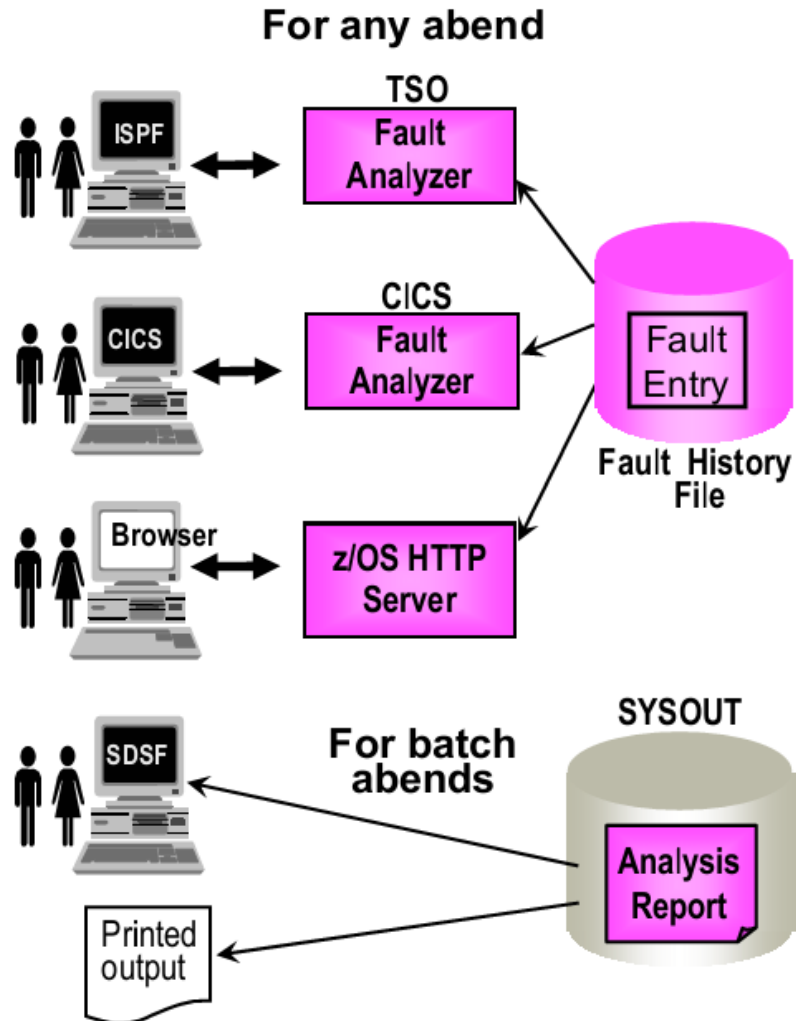
A system abend 0C7 occurred in module SAM2 program SAM2 at offset X'39A'.

A program-interruption code 0007 (Data Exception) is associated with this abend
and indicates that:

A decimal digit or sign was invalid.
```

To View an Analysis Report:

- Use the Fault Analyzer TSO online interface
 - OR -
- Use the Fault Analyzer CICS online interface
 - OR -
- Use a Web Browser
 - OR -
- View or print your batch job's SYSOUT
 - Default is `SYSOUT=*`
 - DD name is `IDIREPRT`



Reanalysis – 1 (Quelle: <http://publib.boulder.ibm.com/infocenter/ieduasst/stgv1r0/index.jsp>)

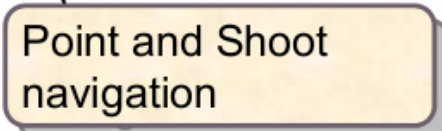
- The **easiest way** to research an abend
- A function of the online interface
- Quickly navigate to:
 - Synopsis
 - Any program in the call chain
 - Program variables and their values
 - File and database detail
 - CICS, DB2, and IMS info
 - Program source listing
 - Storage areas

```
File View Services Help
Interactive Reanalysis Report                               Line 1 Col 1 80
Command ==> _____ Scroll ==> CSR
JOBNAME: DNET074X  SYSTEM ABEND: OCA                      DEMOMVS   2006/12/19  14:27:40

Fault Summary:
Module PHONEP01, program PHONEP01, compiler listing file
DNET074.DEMOS.PLI.LISTING(PHONEP01) statement # 48 : Abend SOCA
(Decimal-Overflow Exception).

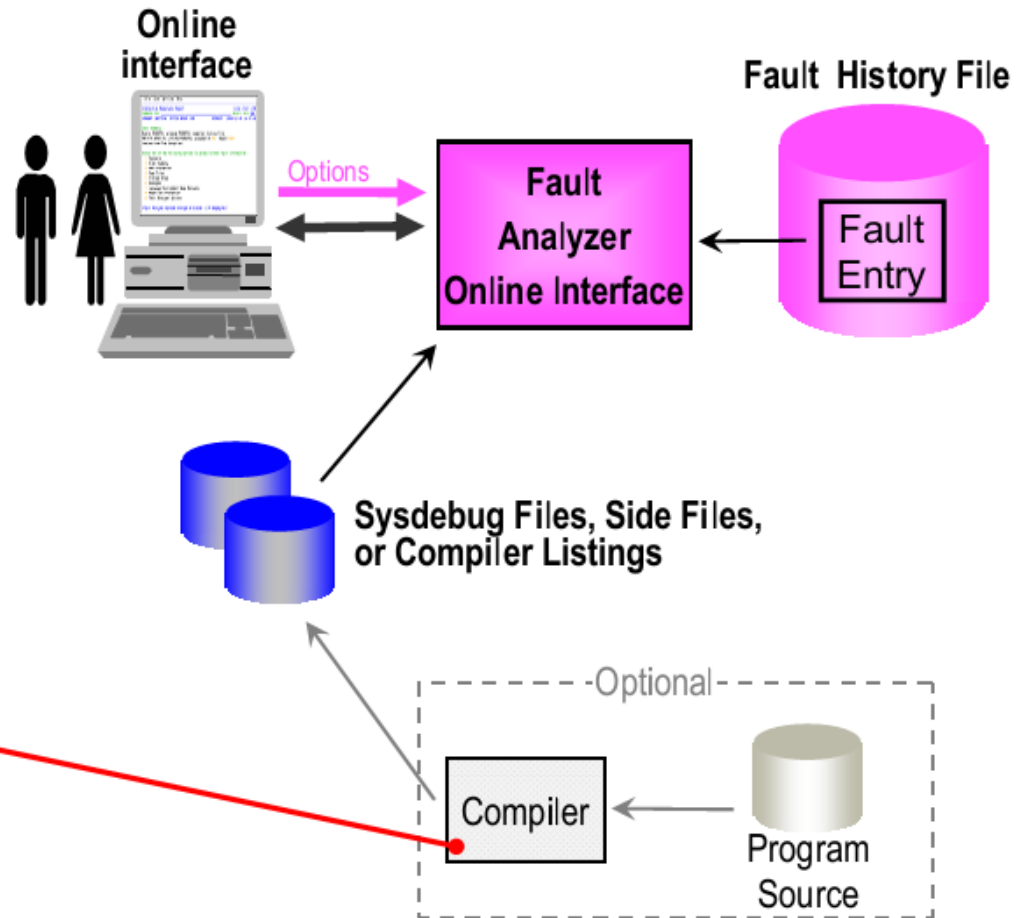
Select one of the following options to access further fault information:
 1. Synopsis
 2. Event Summary
 3. DB2 Information
 4. Open Files
 5. Storage Areas
 6. Messages
 7. Language Environment Heap Analysis
 8. Abend Job Information
 9. Fault Analyzer Options

{Fault Analyzer maximum storage allocated: 1.37 megabytes.}
```



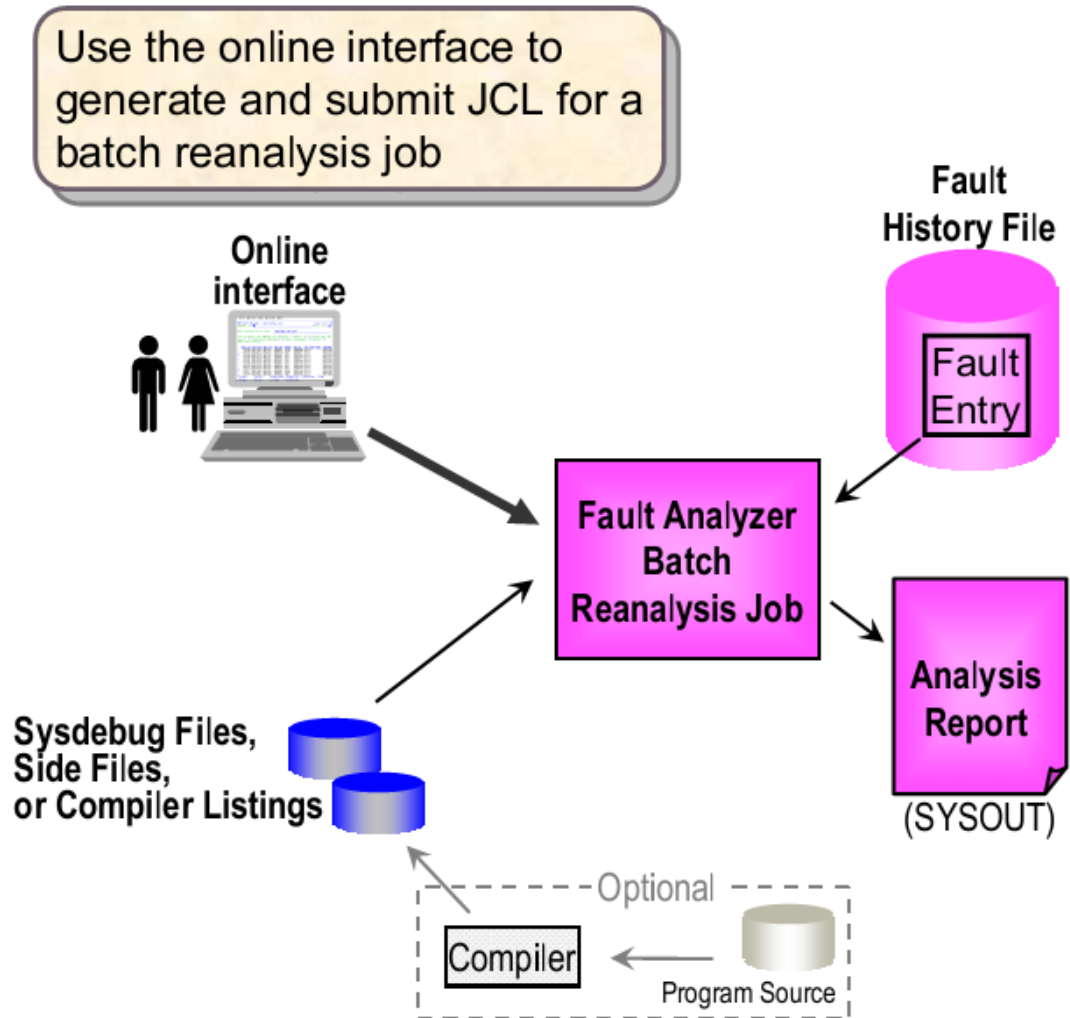
Reanalysis – 2 (Quelle: <http://publib.boulder.ibm.com/infocenter/ieduasst/stgv1r0/index.jsp>)

- Online panels to research abend information
- You can apply source information, *even if source info was not available when the program abended*
- A source info file *can be created after the abend*
- You do NOT have to reproduce the abend



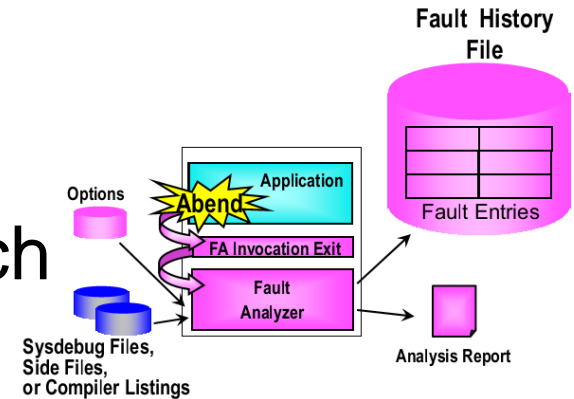
Batch Reanalysis (Quelle: <http://publib.boulder.ibm.com/infocenter/ieduasst/stgv1r0/index.jsp>)

- A batch utility to generate a new analysis report
- Apply source information, *even if the source info was not available during Real-Time analysis*
- Fault Analyzer generates JCL
- JCL can be edited, submitted, and saved



Fault History File

- Alle Informationen werden in dem „Fault History File“ angelegt
- PDSE
- ein (1) Eintrag (entry) pro Abbruch
 - Information über Abend
 - Kopie des Real-Time-Analysis-Report
 - „Minidump“
- als „wrap-around“ angelegt (altes weg)
- Duplikate werden unterdrückt (Meldung im Joblog)



Fault Analyzer Optionen

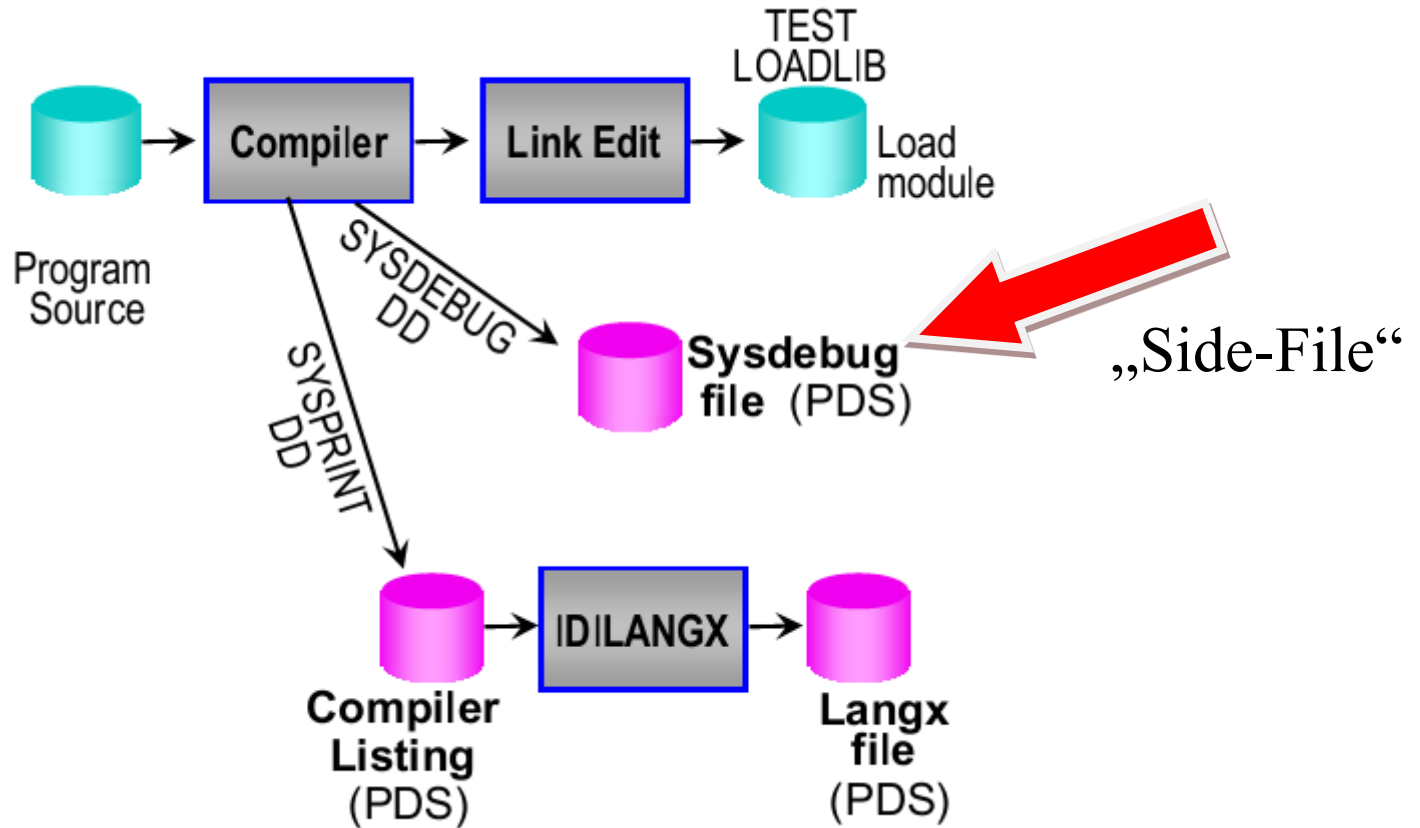
- Optionen bei Installation definiert
- überschreiben von Name History File
- überschreiben von Bibliotheksnamen (u.a.)
 - Side-File
 - Compileliste
- Abend ignorieren / trotzdem analysieren
- Überschreiben durch JCL
- Überschreiben bei Reanalysis

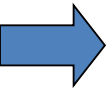
Source Mapping vs. ohne Source Mapping

- Cobol-Code vs. ASM-Code / Hex-Code
- Cobol-Code vs. Offset des ASM-Codes
- Variablen-Inhalte vs. Offset der Variablen

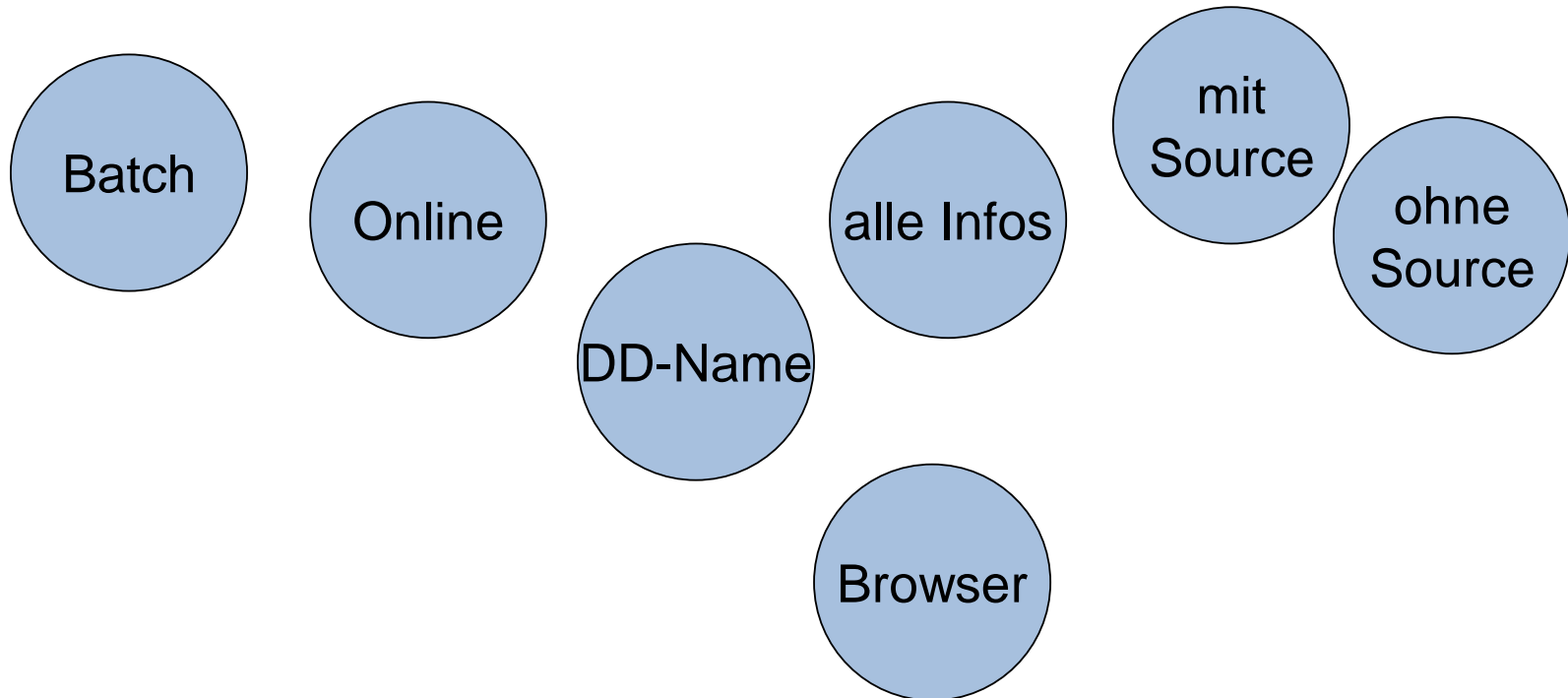
- Aber: nicht immer ist es möglich, zu mappen!
- Ziel: Auch ohne Source-Unterstützung eine Dump-Analyse hervorragend zu bewältigen.

Source Mapping



-
- Einführung und Überblick
 - Produktüberblick
 -  • Realtime Analysis
 - Online Interface
 - Interactive Reanalysis / Batch Reanalysis
 - CICS / DB2 / IMS
 - Compileliste bereitstellen
 - Optionen
 - weitere Tipps
 - Zusammenfassung – Diskussion – Austausch

Begriffe

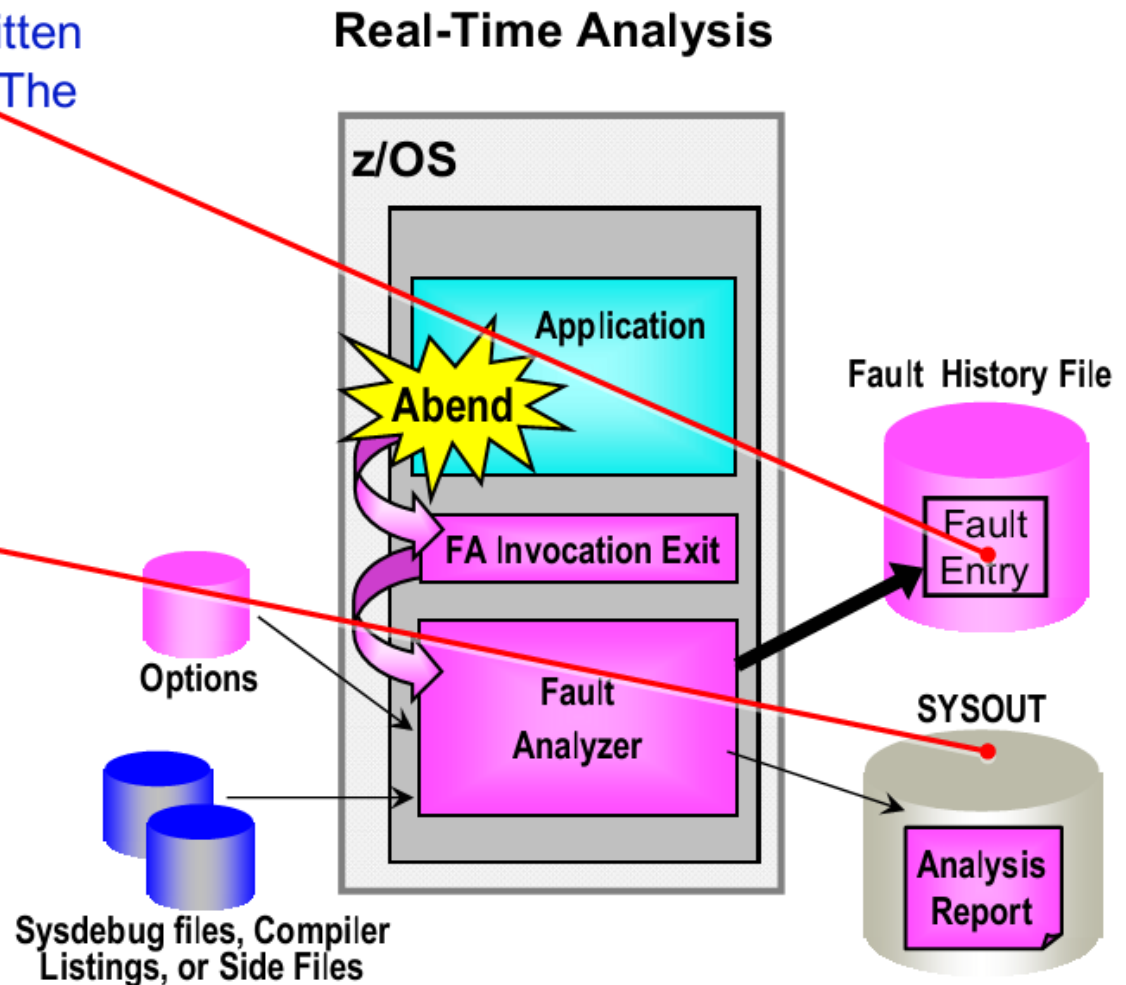


Bildchen von vorhin – 1

5. A new Fault Entry is written to a Fault History File. The entry contains:

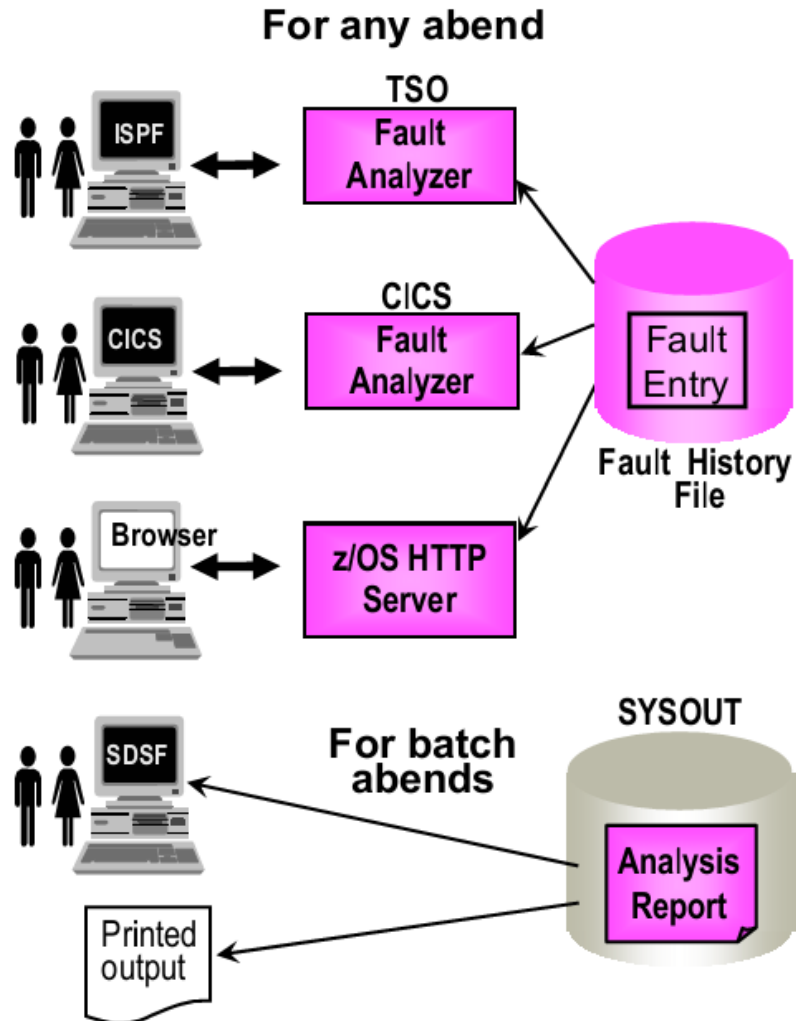
- Info about the application
- The Analysis Report
- A “mini-dump” of the application (this enables reanalysis)

6. The Analysis Report is written to SYSOUT (batch jobs only)



To View an Analysis Report:

- Use the Fault Analyzer TSO online interface
 - OR -
- Use the Fault Analyzer CICS online interface
 - OR -
- Use a Web Browser
 - OR -
- View or print your batch job's SYSOUT
 - Default is `SYSOUT=*`
 - DD name is `IDIREPRT`



Batch – Theorie (und Praxis) – 1

```
VIEW          VKA2.TEST.CNTL(ZDMP0C71) - 01.00          Columns      00001      00072
Command ==>  sub                                       Scroll ==>      CSR
***** ***** Top of Data *****
==MSG> -CAUTION- Profile changed to CAPS ON (from CAPS OFF) because the
==MSG>          data does not contain any lower case characters.
000001 //VKA20C71 JOB (000947,TEST,,,,9900),'ZIT P 2.21,SEIDLER',
000002 //          MSGCLASS=T,CLASS=G,
000003 //          NOTIFY=&SYSUID,MSGLEVEL=(1,1)
000004 //TES39 EXEC PGM=TES39
000005 //STEPLIB DD DSN=SYS4.TEST.PGMLIB,DISP=SHR
000006 //          DD DSN=SYS4.TEST2.PGMLIB,DISP=SHR
000007 //SYSOUT DD SYSOUT=*
000008 //SYSPRINT DD SYSOUT=*

IKJ56250I JOB VKA20C71(JOB09286) SUBMITTED
***

 12.43.26 JOB09286 $HASP165 VKA20C71 ENDED AT NTZD - ABENDED S0C7 U0000 CN(INTER
NAL)
***
```

Batch – Theorie (und Praxis) – 2

```
SDSF STATUS DISPLAY ALL CLASSES                LINE 1-7 (7)
COMMAND INPUT ==>                               SCROLL ==>      CSR
NP  JOBNAME  JobID   Owner   Prty Queue      C  Pos  SAff  ASys Status
    VKA2     TSU05681 VKA2     15 EXECUTION      ENTW  ENTW
    VKA2U    JOB05357  VKA2     1 PRINT           G  3790
    VKA2U    JOB05398  VKA2     1 PRINT           G  3800
    VKA2U    JOB05425  VKA2     1 PRINT           G  3804
    VKA2U    JOB05717  VKA2     1 PRINT           G  3851
    VKA2U    JOB06439  VKA2     1 PRINT           G  4079
s   VKA20C71 JOB09286  VKA2     1 PRINT           G  4945
```

Batch – Theorie (und Praxis) – 3

. . .

```
2.43.25 JOB09286 +IDI0001I Fault Analyzer V11R1M0 (PM60755 2012/03/22) invoked
2.43.25 JOB09286 +IDI0002I Module TES47, program TES47, offset X'712': Abend S
2.43.26 JOB09286 +IDI0003I Fault ID F11306 assigned in history file SYS4.FAULT
```

. . .

Hinweis, dass FA aktiv ist/war.

Batch – Theorie (und Praxis) – 4

```
SDSF STATUS DISPLAY ALL CLASSES                LINE 1-7 (7)
COMMAND INPUT ==>                                SCROLL ==>    CSR
NP  JOBNAME  JobID   Owner   Prty Queue      C  Pos  SAff  ASys Status
    VKA2     TSU05681 VKA2     15 EXECUTION      ENTW  ENTW
    VKA2U    JOB05357  VKA2     1 PRINT           G  3790
    VKA2U    JOB05398  VKA2     1 PRINT           G  3800
    VKA2U    JOB05425  VKA2     1 PRINT           G  3804
    VKA2U    JOB05717  VKA2     1 PRINT           G  3851
    VKA2U    JOB06439  VKA2     1 PRINT           G  4079
?   VKA20C71 JOB09286  VKA2     1 PRINT           G  4945
```

Realtime Analysis

Batch – Theorie (und Praxis) – 5

```
SDSF JOB DATA SET DISPLAY - JOB VKA20C71 (JOB09286)    LINE 1-10 (10)
COMMAND INPUT ==>                                     SCROLL ==>      CSR
NP  DDNAME  StepName ProcStep DSID Owner   C Dest          Rec-Cnt        Page
   JESJCLIN          1 VKA2    T          16
   JESMSGLG JES2     2 VKA2    T LOCAL     25
   JESJCL  JES2     3 VKA2    T LOCAL     18
   JESYSMSG JES2     4 VKA2    T LOCAL    138
   $INTTEXT JES2     5 VKA2    A           11
   SYSIN    TES39   101 VKA2    T            2
   INCARD           102 VKA2    T            1
   SYSOUT   TES39   103 VKA2    T LOCAL     11
   CEEDUMP  TES39   106 VKA2    T LOCAL    498
s  IDIREPRT TES39   107 VKA2    T LOCAL    791
```

Batch – Theorie (und Praxis) – 6

```
***** TOP OF DATA *****  
*****  
* IBM Fault Analyzer for z/OS V11R1M0 (PM60755 2012/03/22) *  
* * * * *  
* Copyright IBM Corp. 2000, 2012. All rights reserved. *  
*****
```

```
JOBNAME: VKA20C71  SYSTEM ABEND: 0C7          ENTW          2012/08/14  12:43:25
```

```
<H1> I B M    F A U L T    A N A L Y Z E R    S Y N O P S I S
```

A system abend 0C7 occurred in module TES47 program TES47 at offset X'712'.

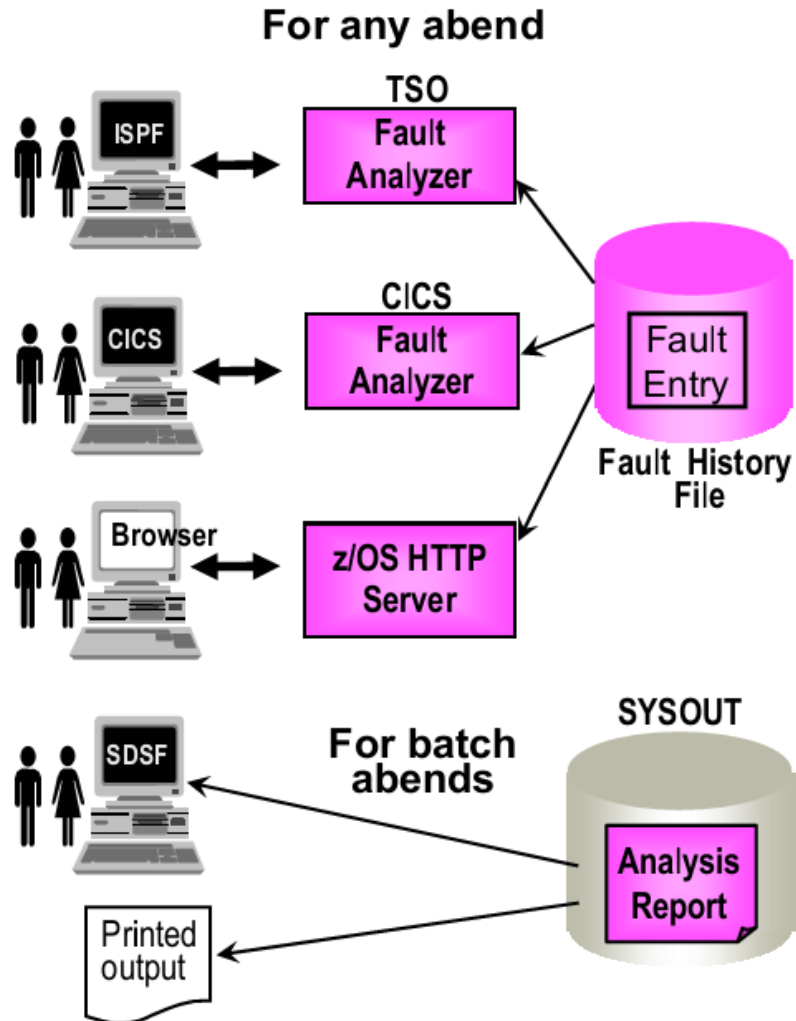
A program-interruption code 0007 (Data Exception) is associated with this abend and indicates that:

A decimal digit or sign was invalid.



To View an Analysis Report:

- Use the Fault Analyzer TSO online interface
- OR -
- Use the Fault Analyzer CICS online interface
- OR -
- Use a Web Browser
- OR -
- View or print your batch job's SYSOUT
 - Default is `SYSOUT=*`
 - DD name is `IDIREPRT`




ISPF-Online – Theorie (und Praxis) – mit / ohne Source – 1

```
File View Services Help
-----
IBM Fault Analyzer - Fault Entry List                               Line 1 Col 1 80
Command ==>                                                       Scroll ==> CSR

Fault History File or View :      'SYS4.FAULT.ANALYZER.R111.HIST'

äThe following line commands are available: ? (Query), V or S (View saved
report), I (Interactive reanalysis), B (Batch reanalysis), D (Delete), H
(Duplicate history), C (Copy fault entry), M (Move fault entry), X (XMIT fault
entry).ü

  Fault_ID Job/Tran User_ID Sys/Job Abend Date      Time
  F11324 AFLN     AFLN     ENTW  S0C4  2012/08/14 13:17:03
  v F11323 VKA20C71 VKA2     ENTW  S0C7  2012/08/14 13:16:38
  F11322 ADDAX    ADDA     ENTW  S0C7  2012/08/14 13:02:20
  F11321 VKA4     VKA4     ENTW  U4038 2012/08/14 13:01:15
  F11320 AU6RGB09 RZOO     ENTW  U3999 2012/08/14 12:59:43
  F11319 AU6RGB08 RZOO     ENTW  U3999 2012/08/14 12:59:15
```



ISPF-Online – Theorie (und Praxis) – mit / ohne Source – 2

```
File View Services Help
-----
Saved Report                               Line 1 Col 1 80
Command ==>                               Scroll ==> CSR
- Collapse all / + Expand all
*****
* IBM Fault Analyzer for z/OS V11R1M0 (PM60755 2012/03/22) *
*                                                                 *
*   Copyright IBM Corp. 2000, 2012.  All rights reserved.   *
*****

JOBNAME: VKA20C71  SYSTEM ABEND: 0C7          ENTW      2012/08/14  13:16:38

- <H1> I B M   F A U L T   A N A L Y Z E R   S Y N O P S I S

A system abend 0C7 occurred in module TES47 program TES47 at offset X'A3A'.

A program-interruption code 0007 (Data Exception) is associated with this abend
and indicates that:

    A decimal digit or sign was invalid.

The cause of the failure was program TES47 in module TES47.  The COBOL source
```



ISPF-Online – Theorie (und Praxis) – mit / ohne Source – 3

```
File View Services Help
-----
Saved Report                               Line 1 Col 1 80
Command ==>                               Scroll ==> CSR
- Collapse all / + Expand all
*****
* IBM Fault Analyzer for z/OS V11R1M0 (PM60755 2012/03/22) *
*                                                                 *
*   Copyright IBM Corp. 2000, 2012.  All rights reserved.   *
*****

JOBNAME: VKA20C71  SYSTEM ABEND: 0C7          ENTW          2012/08/14  13:16:38

+ <H1> I B M   F A U L T   A N A L Y Z E R   S Y N O P S I S
+ <H1> I B M   F A U L T   A N A L Y Z E R   E V E N T   S U M M A R Y
+ <H1> I B M   F A U L T   A N A L Y Z E R   E V E N T   D E T A I L S
+ <H2> EVENT 1 OF 3: CALL (DSA ADDRESS 0001D018)
+ <H3> Associated Storage Areas
+ <H2> EVENT 2 OF 3: CALL (DSA ADDRESS 0001D198)
+ <H2> EVENT 3 OF 3: ABEND S0C7
+ <H3> Associated Messages
+ <H3> Additional Event Details
+ <H3> Associated Storage Areas
```



ISPF-Online – Theorie (und Praxis) – mit / ohne Source – 4

```
File View Services Help
-----
Saved Report                               Line 1 Col 1 80
Command ==>                               Scroll ==> CSR
- Collapse all / + Expand all
*****
* IBM Fault Analyzer for z/OS V11R1M0 (PM60755 2012/03/22) *
*                                                                 *
*   Copyright IBM Corp. 2000, 2012.  All rights reserved.   *
*****

JOBNAME: VKA20C71  SYSTEM ABEND: 0C7          ENTW      2012/08/14  13:16:38

+ <H1> I B M   F A U L T   A N A L Y Z E R   S Y N O P S I S
+ <H1> I B M   F A U L T   A N A L Y Z E R   E V E N T   S U M M A R Y
+ <H1> I B M   F A U L T   A N A L Y Z E R   E V E N T   D E T A I L S
+ <H2> EVENT 1 OF 3: CALL (DSA ADDRESS 0001D018)
+ <H3> Associated Storage Areas
+ <H2> EVENT 2 OF 3: CALL (DSA ADDRESS 0001D198)
+ <H2> EVENT 3 OF 3: ABEND S0C7
+ <H3> Associated Messages
+ <H3> Additional Event Details
+ <H3> Associated Storage Areas
```



ISPF-Online – Theorie (und Praxis) – mit Source – 5

```
File View Services Help
-----
Saved Report                               Line 1 Col 1 80
Command ==>                               Scroll ==> CSR
- Collapse all / + Expand all
*****
* IBM Fault Analyzer for z/OS V11R1M0 (PM60755 2012/03/22) *
*                                                                 *
*   Copyright IBM Corp. 2000, 2012.  All rights reserved.   *
*****

JOBNAME: VKA20C71  SYSTEM ABEND: 0C7          ENTW      2012/08/14  13:16:38

- <H1> I B M   F A U L T   A N A L Y Z E R   S Y N O P S I S

A system abend 0C7 occurred in module TES47 program TES47 at offset X'A3A'.

A program-interruption code 0007 (Data Exception) is associated with this abend
and indicates that:

    A decimal digit or sign was invalid.

The cause of the failure was program TES47 in module TES47.  The COBOL source
```



ISPF-Online – Theorie (und Praxis) – mit Source – 6

File View Services Help

Saved Report

Line nnn Col 1 80

Command ==>

Scroll ==> CSR

- <H1> I B M F A U L T A N A L Y Z E R S Y N O P S I S

A system abend 0C7 occurred in module TES47 program TES47 at offset X'A3A'.

A program-interruption code 0007 (Data Exception) is associated with this abend and indicates that:

A decimal digit or sign was invalid.

The cause of the failure was program TES47 in module TES47. The COBOL source code that immediately preceded the failure was:

Source

Line #

000103 00102

COMPUTE FELD-ERGEBNIS-3 = FELD-5 / FELD-6



ISPF-Online – Theorie (und Praxis) – mit Source – 7

```
File View Services Help
-----
Saved Report                               Line nnn Col 1 80
Command ==>                               Scroll ==> CSR

The COBOL source code for data fields involved in the failure:

Source
Line #
-----
000037 00036          10 FELD-ERGEBNIS-3          PIC S9(009) BINARY.
000061 00060          10 FELD-5                      PIC  9(009).
000063 00062          10 FELD-6                      PIC  9(009).

Data field values at time of abend:

FELD-ERGEBNIS-3 = 0
FELD-5          = X'F0F0F0F0F0F04C4C'  *** Cause of error ***
FELD-6          = 66
```



ISPF-Online – Theorie (und Praxis) – mit Source – 8

File View Services Help

Saved Report

Line nnn Col 1 80

Command ==>

Scroll ==> CSR

- <H1> I B M F A U L T A N A L Y Z E R E V E N T S U M M A R Y

The following events are presented in chronological order.

Event #	Type	Fail Point	Module Name	Program Name	EP Name	Event Location (*)	Description
1	Call		TES39	TES39	TES39	E+560	From SYS4.TE
2	Call		IGZCPAC	n/a	IGZCFCC	E+2C0	INITIAL LOAD
3	Abend	S0C7	*****	TES47	TES47	L#103 E+A3A	From SYS4.TE

(*) One or more of the following abbreviations might appear in the "Event Location" column:

F#n Source file number (refer to detailed event information for file identification)

L#n Source file line number

S#n Listing file statement number (refer to detailed event information for file identification)

M+x Offset from start of load module

P+x Offset from start of program

E+x Offset from start of entry point



ISPF-Online – Theorie (und Praxis) – mit Source – 9

```
File View Services Help
-----
Saved Report                               Line nnn Col 1 80
Command ==>                               Scroll ==> CSR
- <H2> EVENT 1 OF 3: CALL (DSA ADDRESS 0001D018)

NOTE: Source code information could not be presented because the search for a
      compiler listing or side-file was unsuccessful for program TES39.

Load Module Name. . . . . : SYS4.TEST.PGMLIB(TES39)
. . .
- <H2> EVENT 2 OF 3: CALL (DSA ADDRESS 0001D198)

Load Module Name. . . . . : IGZCPAC (In Link Pack Area) - INITIAL LOAD PHASE (
. . .

- <H2> EVENT 3 OF 3: ABEND S0C7

*****
***** POINT OF FAILURE *****
*****

Abend Code. . . . . : S0C7
Program-Interruption Code . : 0007 (Data Exception)
                          A decimal digit or sign was invalid.

The source code below was executed via the following sequence of PERFORM stateme

Source
Line #
```



ISPF-Online – Theorie (und Praxis) – mit Source – 10

```
File View Services Help
-----
Saved Report                               Line nnn Col 1 80
Command ==>>                               Scroll ==>> CSR
COBOL Source Code:

Source
Line #
-----
-5 00097      SET IDX-2      TO 3
-4 00098      COMPUTE FELD-ERGENIS-1 = FELD-1 + FELD-2
-3 00099      DISPLAY '* ERGENIS ADDITION      : ' FELD-ERGENIS-1
-2 00100      COMPUTE FELD-ERGENIS-2 = FELD-3 * FELD-4
-1 00101      DISPLAY '* ERGENIS MULTIPLIKATION : ' FELD-ERGENIS-2
000103 00102      COMPUTE FELD-ERGENIS-3 = FELD-5 / FELD-6
+1 00103      DISPLAY '* ERGENIS DIVISION      : ' FELD-ERGENIS-3
+2 00104      COMPUTE FELD-ERGENIS-4 = FELD-6 / FELD-7
+3 00105 *
+4 00106      CONTINUE.
+5 00107      FKT-1-E.

Data Field Declarations:

Source
Line #
-----
000037 00036      10 FELD-ERGENIS-3      PIC S9(009) BINARY.
000061 00060      10 FELD-5                PIC 9(009).
000063 00062      10 FELD-6                PIC 9(009).
```



ISPF-Online – Theorie (und Praxis) – mit Source – 11


```
File View Services Help
-----
Saved Report                               Line nnn Col 1 80
Command ==>                               Scroll ==> CSR
Data Field Values:

FELD-ERGEBNIS-3 = 0
FELD-5          = X'F0F0F0F0F0F04C4C4C'  *** Cause of error ***
FELD-6          = 66

The listing file used for the above was found via Compiler TEST option in
SYS4.DEBUG.LISTFILE(TES47D9) .

Load Module Name. . . . . : SYS4.TEST.PGMLIB(TES47)
At Address. . . . . : 36EB0098
Load Module Length. . . . : X'5F68'
Link-Edit Date and Time . : 2012/08/14 13:10:41

Program and Entry Point Name: TES47
At Address. . . . . : 36EB0098 (Module TES47 offset X'0')
Program Length. . . . . : X'4A0A'
Program Language. . . . . : COBOL (Compiled using IBM Enterprise COBOL for
                             z/OS and OS/390 V4 R1 M0 on 2012/08/14 at
                             13:10:40)
```



ISPF-Online – Theorie (und Praxis) – mit / ohne Source – 12

File View Services Help

Saved Report

Line nnn Col 1 80

Command ==>

Scroll ==> CSR


```
Compiler Options Used . . : ADV APOST ARITH (COMPAT) NOAWO NOCURRENCY DATA (31)
                           NODATEPROC NODBCS NODECK NODLL NODUMP DYNAM
                           NOEXPORTALL NOFASTSRT INTDATE (ANSI) LIB NOLIST MAP
                           NONAME NONUMBER OBJ OFFSET NOOPTIMIZE
                           OUTDD (SYSOUT) NOPFDSGN RENT RES RMODE (ANY)
                           NOSEQUENCE SIZE (MAX) SOURCE NOSQL NOSSRANGE NOTERM
                           TEST (HOOK NOSEPARATE NOEJPD) NOTHREAD TRUNC (STD)
                           NOVREF NOWORD XREF ZWB
```



ISPF-Online – Theorie (und Praxis) – mit / ohne Source – 13

```
File View Services Help
-----
Saved Report                               Line nnn Col 1 80
Command ==>                               Scroll ==> CSR

Machine Instruction . . . . : FD94D148D158 DP      328(10,R13),344(5,R13)
  At Address. . . . . : 36EB0AD2 (Program TES47 offset X'A3A')
  AMODE . . . . . : 31
  Failing Operand . . . . : First operand
  First Operand Address . . : 0001D4C0 (244544 bytes of storage addressable)
  First Operand Length. . . : 10
  First Operand Storage . . : 00000000 00000000 CCCF *.....*
  Second Operand Address. . : 0001D4D0 (244528 bytes of storage addressable)
  Second Operand Length . . : 5
  Second Operand Storage. . : 00000006 6F *....?*
```



File View Services Help

Saved Report
Command ==>

Line nnn Col 1 80
Scroll ==> CSR

- <H3> Associated Messages

CEE3207S The system detected a data exception (System Completion Code=0C7).

CEE3207S The system detected a data exception (System Completion Code=0C7).

Explanation: Your program attempted to use a decimal instruction incorrectly.
See a Principles of Operation manual for a full list of data exceptions.

Programmer response: Check the variables associated with the failing statement
to make sure that they have been initialized correctly.

System action: The thread is terminated.

Symbolic feedback code: CEE347



ISPF-Online – Theorie (und Praxis) – mit Source – 15

```
File View Services Help
-----
Saved Report                               Line nnn Col 1 80
Command ==>>                               Scroll ==>> CSR

- <H3> Associated Storage Areas

Task Global Table (TGT) at address 000400D0 for length 388

WORKING-STORAGE SECTION
-----
Off Hex Value                               Data Value                               Source (Starting at)
-----
- <H5> BLW=0000 at address 36A11170
  0 E3C5E2F4 F740F1F7 61E0E861 F1F140D3 *TES47 17/08/11 L* 77 LEVEL PICTURE X
 10 E5F0F3F6                               *V036                                     *
                                           01 HILFSFELDER.
 18 E3C5E2F4 F7404040                       *TES47                                     * 05 PGM-NAME
 20 E3C5E2F6 F6404040                       *TES66                                     * 05 TES66
 28 00000000                               0                                           05 I1
 2C 00000000                               0                                           05 I1-MAX
 30 00000000                               0                                           05 BIN-ZAHL
 30 00000000                               *.....                                     * 05 BIN-CHAR RED
 34 00000000 00                             *.....                                     * 05 PAC-ZAHL
 34 00000000 00                             *.....                                     * 05 PAC-CHAR RED
 39 00000000 00000000 00                   *.....                                     * 05 DIS-ZAHL
 39 00000000 00000000 00                   *.....                                     * 05 DIS-CHAR RED
                                           05 AUSGABE-ZEIL
 42 00000000 00000000 00                   *.....                                     * 10 FELD-X009
```



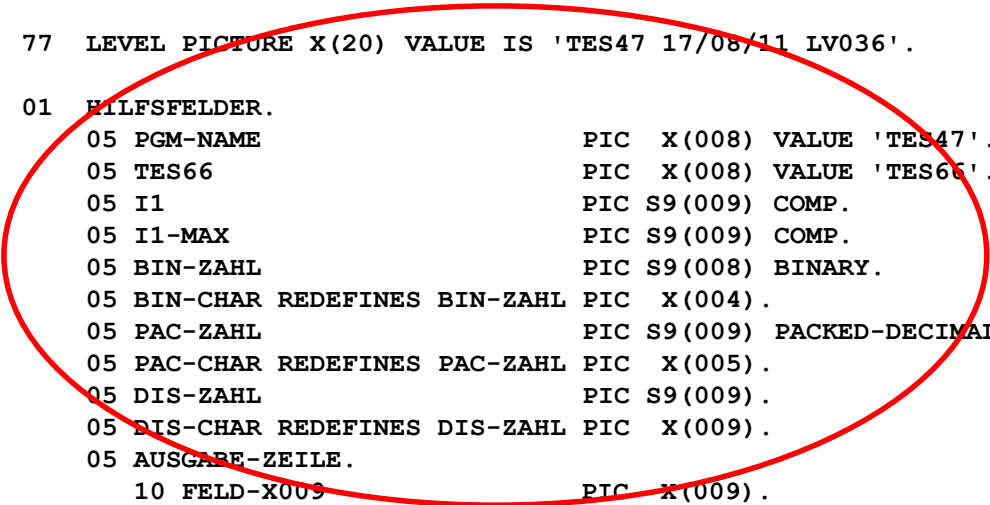


ISPF-Online – Theorie (und Praxis) – mit Source – 16

```
File View Services Help
-----
Saved Report                               Line nnn Col 1 80
Command ==>                               Scroll ==> CSR

388

Source (Starting at Line # 000018)
-----
11 L* 77 LEVEL PICTURE X(20) VALUE IS 'TES47 17/08/11 LV036'.
*
* 01 HILFSFELDER.
* 05 PGM-NAME PIC X(008) VALUE 'TES47'.
* 05 TES66 PIC X(008) VALUE 'TES66'.
* 05 I1 PIC S9(009) COMP.
* 05 I1-MAX PIC S9(009) COMP.
* 05 BIN-ZAHL PIC S9(008) BINARY.
* 05 BIN-CHAR REDEFINES BIN-ZAHL PIC X(004).
* 05 PAC-ZAHL PIC S9(009) PACKED-DECIMAL.
* 05 PAC-CHAR REDEFINES PAC-ZAHL PIC X(005).
* 05 DIS-ZAHL PIC S9(009).
* 05 DIS-CHAR REDEFINES DIS-ZAHL PIC X(009).
* 05 AUSGABE-ZEILE.
* 10 FELD-X009 PIC X(009).
```



```
File View Services Help
-----
Saved Report                               Line nnn Col 1 80
Command ==>>                               Scroll ==>> CSR

- <H1> S Y S T E M - W I D E   I N F O R M A T I O N

=====
- <H2> OPEN FILES
-----
- <H3> Non-Event-Related Open Files

File Name . . . . . CEEDUMP
Data Set Name . . . . . : VXA2-VXA20C71.JOB10840.D0000106.?
File Attributes . . . . . : ORGANIZATION=SEQUENTIAL, ACCESS MODE=n/a,
                           RECFM=FIXED BLOCKED ASA
Last I/O Function . . . . . : WRITE
Open Status . . . . . : OUTPUT

Current Record. . . . . : Record data length 133
Address Offset      Hex                               EBCDIC
-----
36EDDC08           40404040 40404040 40404040 40404040 *
                   Lines 36EDDC18-36EDDC78 (X'70' bytes) same as above
36EDDC88           +80 40404040 40                               *

```

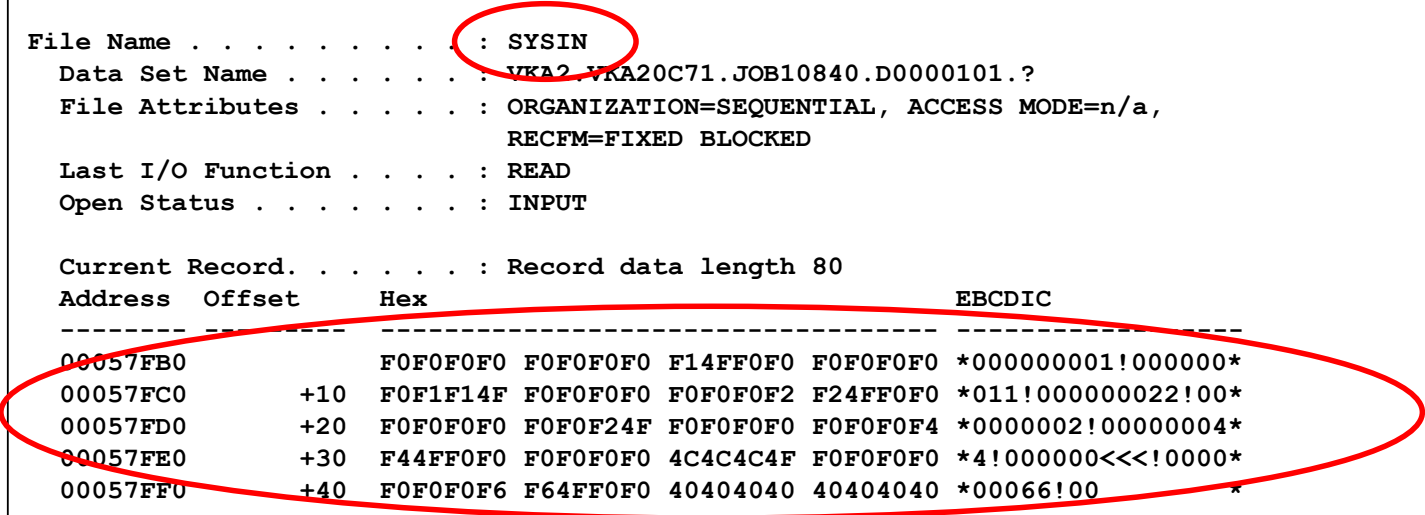


ISPF-Online – Theorie (und Praxis) – mit / ohne Source – 18

```
File View Services Help
-----
Saved Report                               Line nnn Col 1 80
Command ==>                               Scroll ==> CSR

File Name . . . . . : SYSIN
Data Set Name . . . . . : VKA2 VKA20C71.JOB10840.D0000101.?
File Attributes . . . . . : ORGANIZATION=SEQUENTIAL, ACCESS MODE=n/a,
                           RECFM=FIXED BLOCKED
Last I/O Function . . . . . : READ
Open Status . . . . . : INPUT

Current Record. . . . . : Record data length 80
Address  Offset      Hex                               EBCDIC
-----  -
00057FB0          F0F0F0F0 F0F0F0F0 F14FF0F0 F0F0F0F0 *000000001!000000*
00057FC0          +10 F0F1F14F F0F0F0F0 F0F0F0F2 F24FF0F0 *011!000000022!00*
00057FD0          +20 F0F0F0F0 F0F0F24F F0F0F0F0 F0F0F0F4 *0000002!00000004*
00057FE0          +30 F44FF0F0 F0F0F0F0 4C4C4C4F F0F0F0F0 *4!000000<<<!0000*
00057FF0          +40 F0F0F0F6 F64FF0F0 40404040 40404040 *00066!00 *
```



ISPF-Online – Theorie (und Praxis) – mit / ohne Source – 19

```
File View Services Help
-----
Saved Report                               Line nnn Col 1 80
Command ==>                               Scroll ==> CSR

- <H2> STORAGE AREAS

-----

- <H3> Hex-Dumped Storage

Address  Offset      Hex                               EBCDIC
-----
      Event 1 Program TES39 GPR 9 (Address 0003F100)
      Event 1 Program TES39 TGT (Address 0003F100)
0003F100      00000000 00000000 00000000 00000000 *.....*
      Lines 0003F110-0003F130 (X'30' bytes) same as above
0003F140      +40  00000000 00000000 F3E3C7E3 00000000 *.....3TGT....*
0003F150      +50  06000000 60420260 0003D038 000077FC *...-...ü....*
0003F160      +60  0003F248 00000000 00000087 00000000 *..2.....g....*
0003F170      +70  00000000 36A11028 00000000 00000000 *...ß.....*
0003F180      +80  00012B88 00000148 00000000 00000000 *...h.....*
0003F190      +90  00000000 00000001 E2E8E2D6 E4E34040 *.....SYSOUT *
0003F1A0      +A0  C9C7E9E2 D9E3C3C4 00000000 00000000 *IGZSRITCD.....*
```



```
File View Services Help
-----
Saved Report                               Line nnn Col 1 80
Command ==>                               Scroll ==> CSR

- <H2> LANGUAGE ENVIRONMENT HEAP ANALYSIS

No errors were found in any segments

Enclave-Level Storage
Management (ENSM) Address . : 00011CB8
Heap allocation
initialization value
specified . . . . . : No
Heap free initialization
value specified . . . . . : No

-----
- <H3> User Heap Analysis

Heap Anchor Node (HANC) . . : 36A11000
Heapid. . . . . : 00000000
Root Address. . . . . : 36A11260
Segment Length. . . . . : 00008000
Root Length . . . . . : 00007DA0
```



ISPF-Online – Theorie (und Praxis) – mit / ohne Source – 21


```
File View Services Help
-----
Saved Report                               Line nnn Col 1 80
Command ==>>                               Scroll ==>> CSR

- <H1> I B M   F A U L T   A N A L Y Z E R   A B E N D   J O B   I N F O

IBM Fault Analyzer Abend Job Information:

Abend Date. . . . . : 2012/08/14
Abend Time. . . . . : 13:16:38
System Name . . . . . : ENTW
Job Type. . . . . : Batch
Job ID. . . . . : JOB10840
Job Name. . . . . : VKA20C71
Job Step Name . . . . . : TES39
ASID. . . . . : 4A9
Abend TCB Address . . . . . : 007D1AE8
Job Execution Class . . . . . : G
Region Size . . . . . : 999K
EXEC Program Name . . . . . : TES39
User ID . . . . . : VKA2
Accounting Information. . . . . : 208830,TEST,,,,


```



ISPF-Online – Theorie (und Praxis) – mit / ohne Source – 22

File View Services Help

Saved Report
Command ==>

Line nnn Col 1 80
Scroll ==> CSR

Data Sets:

DDname Data Set or Path Name

STEPLIB SYS4.TEST.PGMLIB
SYS4.TEST2.PGMLIB

Event-Related Application Programs:

The following list of event-related application programs is sorted by module link-edit date/time and program compilation date/time in reverse chronological order.

Module Name	Link-Edit Date	Link-Edit Time	Program Name	Compilation Date	Compilation Time
TES47	2012/08/14	13:10:41	TES47	2012/08/14	13:10:40
TES39	2012/08/14	13:10:23	TES39	2012/08/14	13:10:23



ISPF-Online – Theorie (und Praxis) – mit / ohne Source – 23

File View Services Help

Saved Report

Line nnn Col 1 80

Command ==>

Scroll ==> CSR

Point Of Failure LINKEDIT Map:

Address	Offset	Length	Type	Date	Time	RMODE	AMODE	Language	Nam
36EB0098	0	5F68	MODULE	2012/08/14	13:10:41		31		TES
36EB0098	0	0	EP						TES
36EB0098	0	4A0A	CSECT	2012/08/14	13:10:40	ANY	MIN	COBOL	TES
36EB4AA8	4A10	924	CSECT	2003/08/22		ANY	MIN	ASM	CEE
36EB53D0	5338	18	CSECT	2010/03/16		ANY	MIN	ASM	CEE
36EB53E8	5350	28	CSECT	2010/03/19		ANY	MIN	ASM	CEE
36EB5410	5378	B0	CSECT	2010/03/19		ANY	MIN	ASM	CEE
36EB54C0	5428	580	CSECT	2010/03/16		ANY	31	ASM	IGZ
36EB5A40	59A8	B8	CSECT	2010/03/19		ANY	MIN	ASM	CEE
36EB5AF8	5A60	2A0	CSECT	2010/03/19		ANY	31	ASM	CEE
36EB5D98	5D00	E2	CSECT	2010/03/19		ANY	MIN	ASM	CEE
36EB5E80	5DE8	70	CSECT	2010/03/19		ANY	MIN	ASM	CEE
36EB5EF0	5E58	A4	CSECT	2010/03/19		ANY	MIN	ASM	CEE
36EB5F98	5F00	5C	CSECT	2010/03/19		ANY	MIN	ASM	CEE
36EB5FF8	5F60	8	CSECT	2010/03/19		ANY	MIN	ASM	CEE

Load module TES47 is serially reusable and resident above 16MB.



ISPF-Online – Theorie (und Praxis) – mit / ohne Source – 24

```
File View Services Help
-----
Saved Report                               Line nnn Col 1 80
Command ==>>                               Scroll ==>> CSR

Execution Environment:

Operating System. . . . . : z/OS V1R12M0
Data Facility Product . . : DFSMS z/OS V1R12M0
Job Entry Subsystem . . . : JES2
Language Environment. . . : V1 R12.0
CPU Model . . . . . : 2817

Language Environment Run-Time Options:

Last Where Set          Option
-----
PARMLIB (CEEPRM01)     ABPERC (NONE)
PARMLIB (CEEPRM01)     ABTERMENC (ABEND)
PARMLIB (CEEPRM01)     NOAIXBLD
PARMLIB (CEEPRM01)     ALL31 (OFF)
PARMLIB (CEEPRM01)     ANYHEAP (16384,8192,BELOW,FREE)
PARMLIB (CEEPRM01)     NOAUTOTASK
PARMLIB (CEEPRM01)     BELOWHEAP (8192,4096,FREE)
```




ISPF-Online – Theorie (und Praxis) – mit / ohne Source – 25

```
File View Services Help
-----
Saved Report                               Line nnn Col 1 80
Command ===>                               Scroll ===> CSR

- <H1> I B M   F A U L T   A N A L Y Z E R   O P T I O N S

IBM Fault Analyzer Options in Effect:

Detail (Medium)
NoErrorHandler
Language (ENU)
NoLocale
MaxMiniDumpPages (10000) - not exceeded
NoDup (CICSfast (1200) ,NoIncludeExecCicsDump) - not a duplicate
NoDup (ImageFast (5)) - not a duplicate
NoDup (Normal (24) ,Jobname) - not a duplicate
NoPermitLangx
PreferredFormattingWidth (80)
NoPrintInactiveCOBOL
RetainDump (All)
Source
SpinIDIREPRT
StoragePrintLimit (256K) - not exceeded
SystemWidePreferred (StorageAreas (Hex))
RDZClient
```



File View Services Help

Saved Report

Line nnn Col 1 80

Command ==>

Scroll ==> CSR

Data Sets:

The following Fault Analyzer data set or path names were either preallocated, specified via DataSets options, or provided as defaults.

DDname	Data Set or Path Name
IDIBOOKS	SYS3.FAULT.ANALYZER.R111.SIDIBOOK
IDIDOC	SYS3.FAULT.ANALYZER.R111.SIDIDOC1
IDIHIST	SYS4.FAULT.ANALYZER.R111.HIST
IDILCOB	SYS4.DEBUG.LISTFILE
IDIMAPS	SYS3.FAULT.ANALYZER.R111.SIDIMAPS
IDISYSDB	SYS4.DBGTOOL.SYSDEBUG
IDIVSENU	SYS3.FAULT.ANALYZER.R111.IDIVSENU

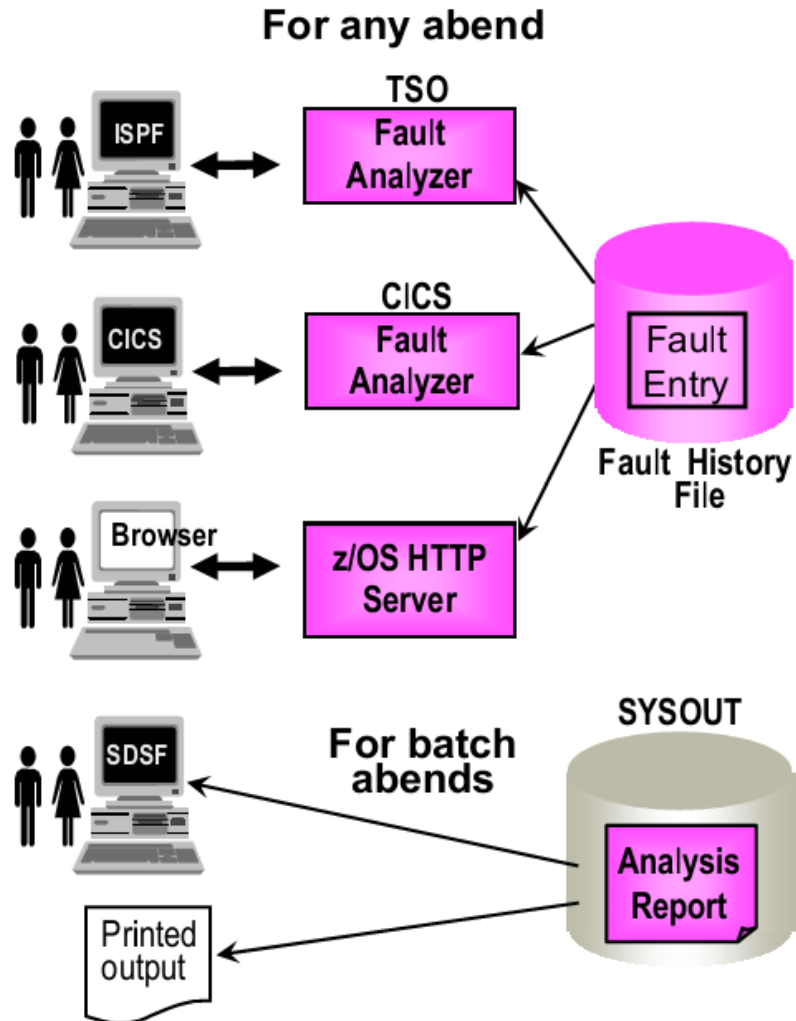
Fault Analyzer was invoked via the LE CEEEXTAN exit (IDIXCEE). Its execution time was 0.73 seconds. It used 0.34 CPU seconds and 1.85 megabytes of allocated storage.

Fault ID F11323 assigned in history file **SYS4.FAULT.ANALYZER.R111.HIST.**



To View an Analysis Report:

- Use the Fault Analyzer TSO online interface
- OR -
- Use the Fault Analyzer CICS online interface
- OR -
- Use a Web Browser
- OR -
- View or print your batch job's SYSOUT
 - Default is `SYSOUT=*`
 - DD name is `IDIREPRT`



ISPF-Online – Theorie (und Praxis) – ohne Source – 1

```
File View Services Help
-----
Saved Report                               Line nnn Col 1 80
Command ==>                               Scroll ==> CSR

- Collapse all / + Expand all
*****
* IBM Fault Analyzer for z/OS V11R1M0 (PM60755 2012/03/22) *
*                                                                 *
*   Copyright IBM Corp. 2000, 2012. All rights reserved.      *
*****

JOBNAME: VKA20C7X  SYSTEM ABEND: 0C7          ENTW          2012/08/14  17:17:05

- <H1> I B M   F A U L T   A N A L Y Z E R   S Y N O P S I S

A system abend 0C7 occurred in module TES47 program TES47 at offset X'6B2'.

A program-interruption code 0007 (Data Exception) is associated with this abend
and indicates that:

    A decimal digit or sign was invalid.
```



ISPF-Online – Theorie (und Praxis) – ohne Source – 2

```
File View Services Help
-----
Saved Report                               Line nnn Col 1 80
Command ==>>                               Scroll ==>> CSR

The abend was caused by machine instruction FA44D150D158 (ADD DECIMAL).

Recently referenced data items:

The failing operand at 0001D4C8 is the result of a PACK instruction using the
following zoned decimal data item which contains invalid data:

Data Item . . . . . : BLL=0003+00A
At Address. . . . . : 36A11062
Length. . . . . : X'9'
Data Item Storage . . . : F0F0F05B F0F0F0F0 F0 *000$00000*

Data Item . . . . . : BLL=0003+014
At Address. . . . . : 36A1106C
Length. . . . . : X'9'
Data Item Storage . . . : F0F0F0F0 F0F0F0F2 F2 *000000022*

NOTE: Source code information could not be presented because the search for a
compiler listing or side-file was unsuccessful for program TES47.
```



ISPF-Online – Theorie (und Praxis) – ohne Source – 3

```
File View Services Help
-----
Saved Report                               Line nnn Col 1 80
Command ==>>                               Scroll ==>> CSR

- <H1> I B M   F A U L T   A N A L Y Z E R   E V E N T   S U M M A R Y

The following events are presented in chronological order.

Event          Fail  Module  Program  EP
#  Type        Point Name   Name     Name     Event Location (*) Description
-----
1 Call          TES39  TES39    TES39    E+560    From SYS4.TE
2 Call          IGZCPAC n/a      IGZCFCC  E+2C0    INITIAL LOAD
3 Abend S0C7    ***** TES47    TES47    TES47    E+6B2    From SYS4.TE

(*) One or more of the following abbreviations might appear in the "Event
Location" column:

F#n Source file number (refer to detailed event information for file
identification)
L#n Source file line number
S#n Listing file statement number (refer to detailed event information for
file identification)
M+x Offset from start of load module
P+x Offset from start of program
E+x Offset from start of entry point
```



ISPF-Online – Theorie (und Praxis) – ohne Source – 4

```
File View Services Help
-----
Saved Report                               Line nnn Col 1 80
Command ==>                               Scroll ==> CSR
- <H1> I B M   F A U L T   A N A L Y Z E R   E V E N T   D E T A I L S
=====
+ <H2> EVENT 1 OF 3: CALL (DSA ADDRESS 0001D018)
+ <H3> Associated Storage Areas
+ <H2> EVENT 2 OF 3: CALL (DSA ADDRESS 0001D198)
- <H2> EVENT 3 OF 3: ABEND SOC7
*****
***** POINT OF FAILURE *****
*****
Abend Code. . . . . : SOC7
Program-Interruption Code . : 0007 (Data Exception)
                          A decimal digit or sign was invalid.

Recently referenced data items:
  The failing operand at 0001D4C8 is the result of a PACK instruction using the
  following zoned decimal data item which contains invalid data:

Data Item . . . . . : BLL=0003+00A
  At Address. . . . . : 36A11062
  Length. . . . . : X'9'
  Data Item Storage . . . : F0F0F05B F0F0F0F0 F0 *000$00000*

Data Item . . . . . : BLL=0003+014
  At Address. . . . . : 36A1106C
  Length. . . . . : X'9'
  Data Item Storage . . . : F0F0F0F0 F0F0F0F2 F2 *000000022*

NOTE: Source code information could not be presented because the search for a
      compiler listing or side-file was unsuccessful for program TES47.
```



ISPF-Online – Theorie (und Praxis) – ohne Source – 5

```
File View Services Help
-----
Saved Report                               Line nnn Col 1 80
Command ==>>                               Scroll ==>> CSR

Load Module Name. . . . . : SYS4.TEST.PGMLIB(TES47)
  At Address. . . . . : 36EB07E8
  Load Module Length. . . . : X'1818'
  Link-Edit Date and Time . : 2012/08/14 17:16:20
-----
Program and Entry Point Name: TES47
  At Address. . . . . : 36EB07E8 (Module TES47 offset X'0')
  Program Length. . . . . : X'BE4'
  Program Language. . . . . : COBOL (Compiled using IBM Enterprise COBOL for
                               z/OS and OS/390 V4 R1 M0 on 2012/08/14 at
                               17:16:20)
  Compiler Options Used . . : ADV APOST ARITH(COMPAT) NOAWO NOCURRENCY DATA(31)
                               NODATEPROC NODBCS NODECK NODLL NODUMP DYNAM
                               NOEXPORTALL NOFASTSRT INTDATE(ANSI) LIB NOLIST MAP
                               NONAME NONUMBER OBJ OFFSET OPTIMIZE(FULL)
                               OUTDD(SYSOUT) NOPFDGSGN RENT RES RMODE(ANY)
                               NOSEQUENCE SIZE(MAX) SOURCE NOSQL NOSSRANGE NOTERM
                               NOTEST NOTHREAD TRUNC(STD) NOVBREF NOWORD XREF ZWB
-----
Machine Instruction . . . . : FA44D150D158 AP      336(5,R13),344(5,R13)
  At Address. . . . . : 36EB0E9A (Program TES47 offset X'6B2')
  AMODE . . . . . : 31
  Failing Operand . . . . . : First operand
  First Operand Address . . : 0001D4C8 (244536 bytes of storage addressable)
  First Operand Length. . . : 5
  First Operand Storage . . : 000B0000 0F *.....*
  Second Operand Address. . : 0001D4D0 (244528 bytes of storage addressable)
  Second Operand Length . . : 5
  Second Operand Storage. . : 00000002 2F *.....*
```




ISPF-Online – Theorie (und Praxis) – ohne Source – 6

```
File View Services Help
-----
Saved Report                               Line nnn Col 1 80
Command ==>                               Scroll ==> CSR

Instructions around point of failure:

Offset Hex          Instruction
-----
-3A 0DEF          BASR    R14,R15
-38 5830 913C      L       R3,316(,R9)
-34 D208 D188 3000 MVC    392(9,R13),0(R3)      BLL=0003+000
-2E 96F0 D190      OI      400(R13),240
-2A D508 D188 A2BA CLC    392(9,R13),698(R10)
-24 4770 B160      BC      7,352(,R11)
-20 D203 9144 A2E4 MVC    324(4,R9),740(R10)    IDX=0003+000
-1A D203 9140 A2E0 MVC    320(4,R9),736(R10)    IDX=0002+000
-14 F248 D150 300A PACK   336(5,R13),10(9,R3)  BLL=0003+00A
-E 960F D154      OI      340(R13),15
-A F248 D158 3014 PACK   344(5,R13),20(9,R3)  BLL=0003+014
+ 960F D15C      OI      348(R13),15
***** FA44 D150 D158 AP    336(5,R13),344(5,R13)
+6 5840 912C      L       R4,300(,R9)
+A F384 4034 D150 UNPK   52(9,R4),336(5,R13)
+10 96F0 403C      OI      60(R4),240
+14 94CF 403C      NI      60(R4),207
+18 58F0 202C      L       R15,44(,R2)
+1C 4110 A3F6      LA      R1,1014(,R10)
+20 0DEF          BASR    R14,R15
```



ISPF-Online – Theorie (und Praxis) – ohne Source – 7

File View Services Help

Saved Report

Line nnn Col 1 80

Command ==>

Scroll ==> CSR

- <H3> Associated Messages

CEE3207S The system detected a data exception (System Completion Code=0C7).

CEE3207S The system detected a data exception (System Completion Code=0C7).

Explanation: Your program attempted to use a decimal instruction incorrectly.
See a Principles of Operation manual for a full list of data exceptions.

Programmer response: Check the variables associated with the failing statement
to make sure that they have been initialized correctly.

System action: The thread is terminated.

Symbolic feedback code: CEE347

ISPF-Online – Theorie (und Praxis) – ohne Source – 8

File View Services Help

Saved Report

Line nnn Col 1 80

Command ==>

Scroll ==> CSR

- <H3> Additional Event Details

Program Status Word (PSW) . : 078D1000 B6EB0EA0

General Purpose Registers:

R0: 0001D510 (244464 bytes of storage addressable)
R1: 36EB0D22 (Module TES47 program TES47 + X'53A')
R2: 000077FC (333828 bytes of storage addressable)
R3: 36A11058 (Module TES47 program TES47 LINKAGE SECTION BLL=0003 + X'0')
R4: 36EB0820 (Module TES47 program TES47 + X'38')
R5: 000071BC (335428 bytes of storage addressable)
R6: 0003D3B8 (113736 bytes of storage addressable)
R7: 00FDBF98 (CVT + X'0')
R8: 00007A80 (333184 bytes of storage addressable)
R9: 000400D0 (102192 bytes of storage addressable)
R10: 36EB08F4 (Module TES47 program TES47 + X'10C')
R11: 36EB0DE4 (Module TES47 program TES47 + X'5FC')
R12: 36EB08E4 (Module TES47 program TES47 + X'FC')
R13: 0001D378 (244872 bytes of storage addressable)
R14: B6EB0E62 (Module TES47 program TES47 + X'67A')



ISPF-Online – Theorie (und Praxis) – ohne Source – 9

```
File View Services Help
-----
Saved Report                               Line nnn Col 1 80
Command ==>                               Scroll ==> CSR

- <H3> Associated Storage Areas

Task Global Table (TGT) at address 000400D0 for length 348

WORKING-STORAGE SECTION
BLW=0000 at address 36A110F8 for length 198

LINKAGE SECTION
BLL=0000 has not been assigned an address
BLL=0001 at address 70F0F0F0 for length 0
BLL=0003 at address 36A11058 for length 160

IDX= Hex Value (offset to table occurrence)
-----
0001 00000014
0002 0000001E

See "System-Wide Information" - "Storage Areas" - "Hex-Dumped Storage" for
unformatted storage areas related to this event.
```



ISPF-Online – Theorie (und Praxis) – ohne Source – 10

```
File View Services Help
-----
Saved Report                               Line nnn Col 1 80
Command ==>                               Scroll ==> CSR

- <H2> OPEN FILES

-----

- <H3> Non-Event-Related Open Files

File Name . . . . . : CEEDUMP
Data Set Name . . . . . : VKA2.VKA20C7X.JOB16324.D0000106.?
File Attributes . . . . . : ORGANIZATION=SEQUENTIAL, ACCESS MODE=n/a,
                           RECFM=FIXED BLOCKED ASA
Last I/O Function . . . . . : WRITE
Open Status . . . . . : OUTPUT

Current Record. . . . . : Record data length 133
Address Offset      Hex                               EBCDIC
-----
36E98C08           40404040 40404040 40404040 40404040 *
                   Lines 36E98C18-36E98C78 (X'70' bytes) same as above
36E98C88           +80 40404040 40                               *

File Name . . . . . : SYSIN
Data Set Name . . . . . : VKA2.VKA20C7X.JOB16324.D0000101.?
. . . . .
```



ISPF-Online – Theorie (und Praxis) – ohne Source – 11

```
File View Services Help
-----
Saved Report                               Line nnn Col 1 80
Command ==>                               Scroll ==> CSR

- <H2> STORAGE AREAS

-----

- <H3> Hex-Dumped Storage

Address  Offset      Hex                                     EBCDIC
-----
      Event 1 Program TES39 GPR 9 (Address 0003F100)
      Event 1 Program TES39 TGT (Address 0003F100)
0003F100      00000000 00000000 00000000 00000000 *.....*
      Lines 0003F110-0003F130 (X'30' bytes) same as above
0003F140      +40 00000000 00000000 F3E3C7E3 00000000 *.....3TGT....*
0003F150      +50 06000000 60420260 0003D038 000077FC *...-...ü....*
0003F160      +60 0003F248 00000000 00000087 00000000 *..2.....g....*
0003F170      +70 00000000 36A11028 00000000 00000000 *...ß.....*
0003F180      +80 00012B88 00000148 00000000 00000000 *...h.....*
0003F190      +90 00000000 00000001 E2E8E2D6 E4E34040 *.....SYSOUT *
0003F1A0      +A0 C9C7E9E2 D9E3C3C4 00000000 00000000 *IGZSRITCD.....*
0003F1B0      +B0 00000000 00000000 00000000 00000000 *.....*
      Lines 0003F1C0-0003F1D0 (X'20' bytes) same as above
0003F1E0      +E0 00000000 00000000 36A003F4 00000000 *.....4....*
```



ISPF-Online – Theorie (und Praxis) – ohne Source – 12

```
File View Services Help
-----
Saved Report                               Line nnn Col 1 80
Command ==>                               Scroll ==> CSR

00040220      +150  00000000 00000000 00000001      *..... *

      Event 1 Program TES39 BLW=0000 (Address 36A11040)
      Event 1 Program TES39 GPR 3 (Address 36A11040)
36A11040      00000000 1C000000 00000001 00000000 *.....*
36A11050      +10  E3C5E2F4 F7404040      *TES47 *
      Event 3 Program TES47 BLL=0003 (Address 36A11058)
      Event 3 Program TES47 GPR 3 (Address 36A11058)
36A11058      F0F0F0F0 F0F0F0F0 *      00000000*
36A11060      +8  F14FF0F0 F05BF0F0 F0F0F04F F0F0F0F0 *1!000$00000!0000*
36A11070      +18  F0F0F0F2 F24FF0F0 F0F0F0F0 F0F0F24F *00022!000000002!*
36A11080      +28  F0F0F0F0 F0F0F0F4 F44FF0F0 F0F0F0F0 *000000044!000000*
36A11090      +38  4C4C4C4F F0F0F0F0 F0F0F0F6 F64FF0F0 *<<<<!000000066!00*
36A110A0      +48  40404040 40404040 00000000 00000000 *      .....*
36A110B0      +58  00000000 00000000 00000000 00000000 *.....*
36A110C0      +68  00000000 00000000 00000000 00000000 *.....*
36A110D0      +78  00000000 00000000 36A11000 000000F8 *.....B.....8*
36A110E0      +88  000000EC 00000000 00000000 00000000 *.....*
36A110F0      +98  00000000 00000000      *..... *
      Event 3 Program TES47 BLW=0000 (Address 36A110F8)
36A110F8      E3C5E2F4 F7404040 *      TES47 *
36A11100      +8  E3C5E2F6 F6404040 00000000 00000000 *TES66 .....*
36A11110      +18  00000000 00000000 00000000 00000000 *.....*
      Lines 36A11120-36A111A0 (X'90' bytes) same as above
36A111B0      +B8  00000000 00000000 00000000 0000      *..... *
```



ISPF-Online – Theorie (und Praxis) – ohne Source – 13

File View Services Help

Saved Report
Command ==>

Line nnn Col 1 80
Scroll ==> CSR

- <H1> I B M F A U L T A N A L Y Z E R A B E N D J O B I N F O

IBM Fault Analyzer Abend Job Information:

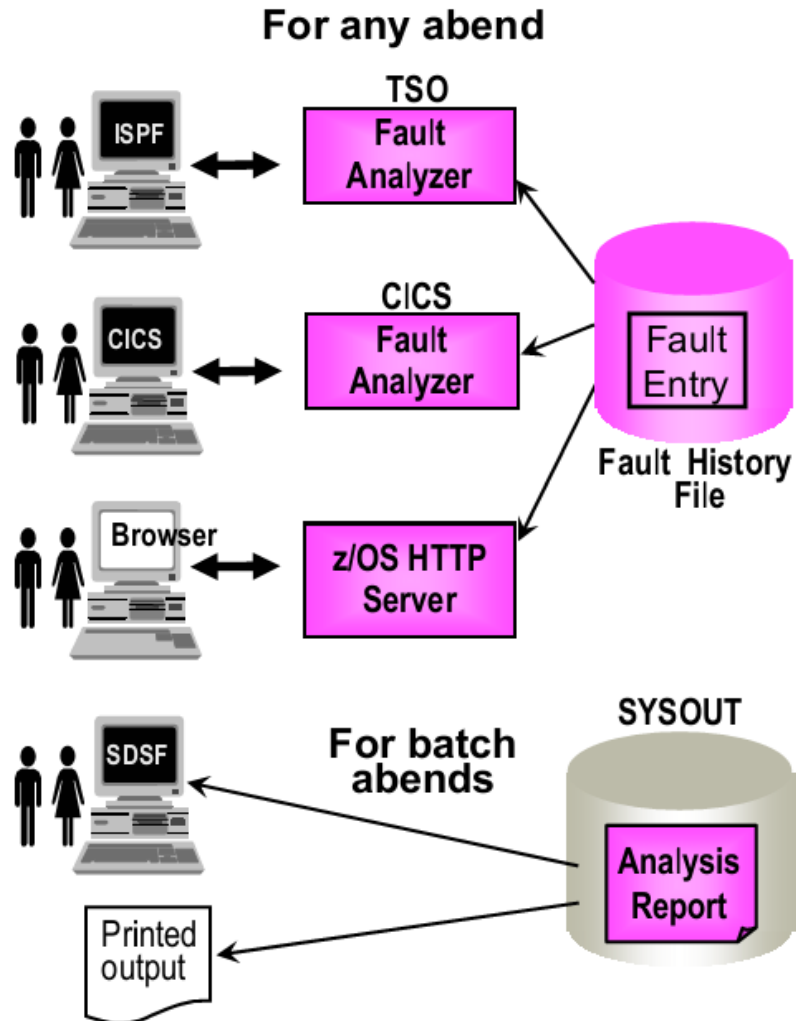
Abend Date. : 2012/08/14
Abend Time. : 17:17:05
System Name : ENTW
Job Type. : Batch
Job ID. : JOB16324
Job Name. : VKA20C7X
Job Step Name : TES39
ASID. : 462
Abend TCB Address : 007D1AE8
Job Execution Class . . . : G
Region Size : 999K
EXEC Program Name : TES39
User ID : VKA2
Accounting Information. . : 208830,TEST,,,,

(Rest alles wie bekannt)



To View an Analysis Report:

- Use the Fault Analyzer TSO online interface
- OR -
- Use the Fault Analyzer CICS online interface
- OR -
- Use a Web Browser
- OR -
- View or print your batch job's SYSOUT
 - Default is `SYSOUT=*`
 - DD name is `IDIREPRT`

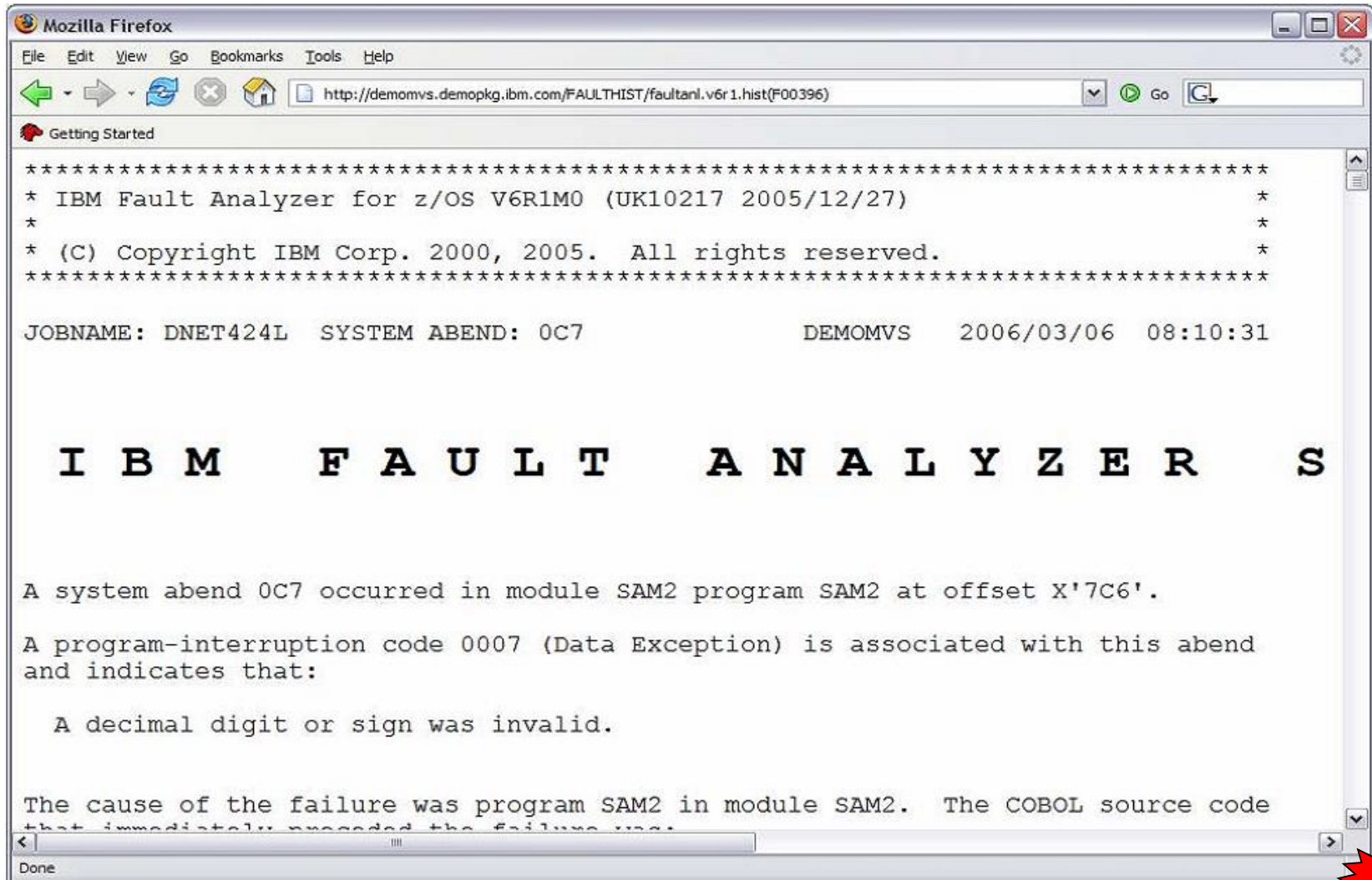


Directory of fault history file 'FAULTANL.V8R1.HIST' - Microsoft Internet Explorer

http://demomvs.demopkg.ibm.com/FAULTANAL/FAULTANL.V8R1.HIST

Fault entries for history file 'FAULTANL.V8R1.HIST'

FAULT_ID	PROGRAM	MD_PAGES	DUP_COUNT	TRAN_ID	JOBNAME	JOB/TRAN	JOB_TYPE	ABEND	MODULE	USER_TITLE	US
FO0184	SAM1	0	0	n/a	DNET246D	DNET246D	Batch	S0CB	SAM1	n/a	n/
FO0183	SAM2	0	0	n/a	DNET246S	DNET246S	Batch	SOC7	SAM2	n/a	n/
FO0182	CUSVSAM	0	0	n/a	DNET311X	DNET311X	Batch	U4038	CUSVSAM	n/a	n/
FO0181	SAM1	0	0	n/a	DNET074F	DNET074F	Batch	S0CB	SAM1	n/a	n/
FO0180	SAM1	0	0	n/a	DNET424Q	DNET424Q	Batch	SOC1	n/a	n/a	n/
FO0179	SAM2	0	0	n/a	DNET424Z	DNET424Z	Batch	SOC7	SAM2	n/a	n/
FO0178	n/a	0	0	n/a	DNET424Q	DNET424Q	Batch	SOC1	n/a	n/a	n/
FO0177	n/a	0	0	n/a	DNET424Q	DNET424Q	Batch	SOC1	n/a	n/a	n/
FO0176	n/a	0	0	n/a	DNET424Q	DNET424Q	Batch	SOC1	n/a	n/a	n/
FO0175	n/a	0	0	n/a	DNET424Q	DNET424Q	Batch	SOC1	n/a	n/a	n/
FO0174	*UNNAMED	0	0	n/a	DNET551U	DNET551U	Batch	S04E	OKK888	n/a	n/
FO0173	SAM2	0	0	n/a	DNET246S	DNET246S	Batch	SOC7	SAM2	n/a	n/
FO0172	n/a	0	0	n/a	DNET424Q	DNET424Q	Batch	SOC1	n/a	n/a	n/
FO0171	EQA00CEE	0	2	n/a	DNET424Z	DNET424Z	Batch	U4038	EQA00EVH	n/a	n/
FO0170	SAM2	0	0	n/a	DNET424Z	DNET424Z	Batch	SOC7	SAM2	n/a	n/
FO0169	n/a	0	0	n/a	DNET424Q	DNET424Q	Batch	SOC1	n/a	n/a	n/
FO0168	n/a	0	0	n/a	DNET424Q	DNET424Q	Batch	SOC1	n/a	n/a	n/
FO0167	ASAMDRV	0	0	n/a	DNET424Q	DNET424Q	Batch	SOC1	ASAMDRV	n/a	n/
FO0166	SAM2	0	0	n/a	DNET246S	DNET246S	Batch	SOC7	SAM2	n/a	n/
FO0165	ATCDEMO	0	0	n/a	DNET603W	DNET603W	Batch	S522	ATCDEMO	n/a	n/
FO0164	SAM2	0	0	n/a	ADPOT24A	ADPOT24A	Batch	SOC7	SAM2	n/a	n/
FO0163	n/a	0	0	n/a	FM2002B	FM2002B	Batch	S522	n/a	n/a	n/
FO0162	EQA00CEE	0	2	n/a	DNET424Q	DNET424Q	Batch	U4038	EQA00EVH	n/a	n/
FO0161	SAM2	0	0	n/a	DNET074F	DNET074F	Batch	SOC7	SAM2	n/a	n/
FO0160	SAM2	0	0	n/a	DNET246S	DNET246S	Batch	SOC7	SAM2	n/a	n/
FO0159	CUSVSAM	0	0	n/a	GEN024	GEN024	Batch	S0CB	CUSVSAM	n/a	n/
FO0158	n/a	0	0	n/a	DNET4221	DNET4221	Batch	S522	n/a	n/a	n/
FO0157	CUSVSAM	0	0	n/a	DNET422	DNET422	Batch	S0CB	CUSVSAM	n/a	n/
FO0156	SAM2	0	0	n/a	ADPOT24X	ADPOT24X	Batch	SOC7	SAM2	n/a	n/
FO0155	DSNAPRH	0	0	n/a	AECLEAN	AECLEAN	Batch	S04E	DSNECP10	n/a	n/
FO0154	SAM2	0	0	n/a	DNET424Z	DNET424Z	Batch	SOC7	SAM2	n/a	n/
FO0153	SAM2	0	0	n/a	DNET424Z	DNET424Z	Batch	SOC7	SAM2	n/a	n/
FO0152	EQA00CEE	0	0	n/a	DNET424Z	DNET424Z	Batch	U4038	EQA00EVH	n/a	n/
FO0151	CUSVSAM	0	0	n/a	DNET4221	DNET4221	Batch	S0CB	CUSVSAM	n/a	n/
FO0150	CUSVSAM	0	0	n/a	DNET4221	DNET4221	Batch	S0CB	CUSVSAM	n/a	n/
FO0149	CUSVSAM	0	0	n/a	DNET4221	DNET4221	Batch	S0CB	CUSVSAM	n/a	n/
FO0148	CUSVSAM	0	0	n/a	DNET4221	DNET4221	Batch	U4038	CUSVSAM	n/a	n/



```
*****
* IBM Fault Analyzer for z/OS V6R1M0 (UK10217 2005/12/27)
*
* (C) Copyright IBM Corp. 2000, 2005. All rights reserved.
*****

JOBNAME: DNET424L  SYSTEM ABEND: 0C7                DEMOMVS  2006/03/06  08:10:31

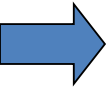
  I B M      F A U L T      A N A L Y Z E R      S

A system abend 0C7 occurred in module SAM2 program SAM2 at offset X'7C6'.

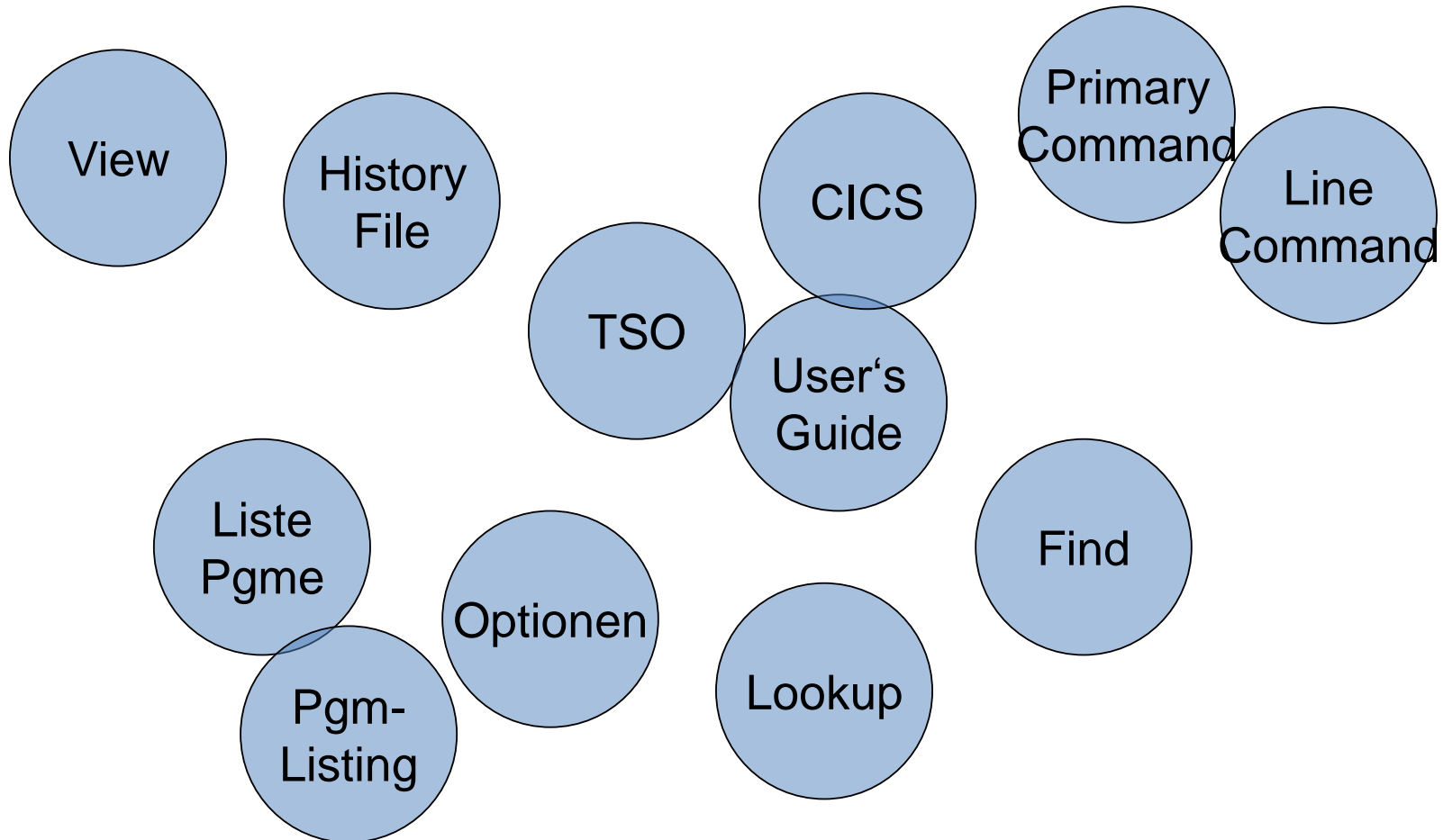
A program-interruption code 0007 (Data Exception) is associated with this abend
and indicates that:

  A decimal digit or sign was invalid.

The cause of the failure was program SAM2 in module SAM2.  The COBOL source code
that immediately preceded the failure was:
```

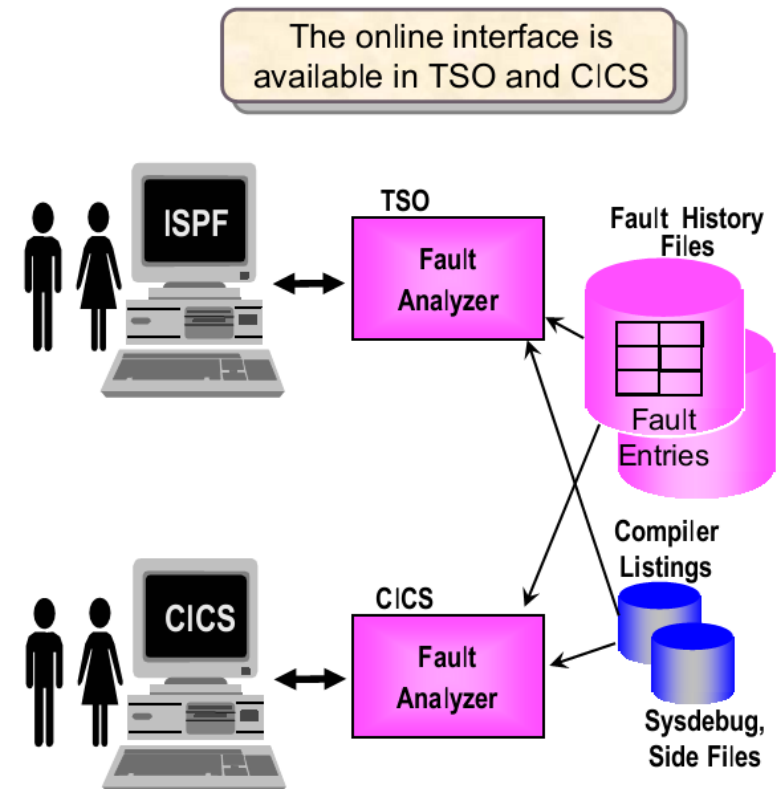

-
- Einführung und Überblick
 - Exkurs in die Theorie
 - Produktüberblick
 - Realtime Analysis
 -  • Online Interface
 - Interactive Reanalysis / Batch Reanalysis
 - CICS / DB2 / IMS
 - Compileliste bereitstellen
 - Optionen und weitere Tipps
 - Zusammenfassung – Diskussion – Austausch

Begriffe



Funktionen

- Anzeige Liste der Abends
- Real-Time Reports ansehen
- Reanalysis starten
- Entrys löschen
- ISPF: TSO %IBMFA (8.FA)
- CICS: IDI



Einstiegsbild – Line Commands

```
File View Services Help
-----
IBM Fault Analyzer - Fault Entry List                               Line 1 Col 1 80
Command ==>                                                       Scroll ==> CSR

Fault History File or View : 'SYS4 FAULT.ANALYZER.R111.HIST'

The following line commands are available: ? (Query), V or S (View saved
report), I (Interactive reanalysis), B (Batch reanalysis), D (Delete), H
(Duplicate history), C (Copy fault entry), M (Move fault entry), X (XMIT fault
entry).ü

v Fault_ID Job/Tran User_ID Sys/Job Abend Date Time
  F11324 AFLN AFLN ENTW S0C4 2012/08/14 13:17:03
  F11323 VKA20C71 VKA2 ENTW S0C7 2012/08/14 13:16:38
  F11322 ADDAX ADDA ENTW S0C7 2012/08/14 13:02:20
  F11321 VKA4 VKA4 ENTW U4038 2012/08/14 13:01:15
  F11320 AU6RGB09 RZOO ENTW U3999 2012/08/14 12:59:43
  F11319 AU6RGB08 RZOO ENTW U3999 2012/08/14 12:59:15
```

Hilfe

```
File      Options  View  Services  Help
-----
IBM Fault Analyzer - Fau | 1. Fault Analyzer User's Guide and Reference... |
Command ==>           | 2. About Fault Analyzer... |
-----
Fault History File or View : 'SYS4.FAULT.ANALYZER.R111.HIST'
```

Primary Commands

```
IBM Fault Analyzer - Fault Entry List  
Command ==> 
```

COLS	Brings up the Column Configuration panel
COPY <i>dsname</i>	Copies the current display to a file
EXEC <i>program</i>	Run your own report program
FIND <i>argument</i>	Searches the list of Fault Entries
LOOKUP <i>message-id</i>	Looks up a system message code
MATCH <i>column argument</i>	Displays only entries that match argument
REFRESH	Refreshes the display to show new entries
SHOW <i>address</i>	Display storage starting at an address
VIEWS	Displays a list of Views that can be selected

Das richtige Fault History File

```
File View Services Help
-----
IBM Fault Analyzer - Fault Entry List                               Line 1 Col 1 80
Command ==>                                                         Scroll ==> CSR

Fault History File or View : 'SYS4.FAULT.ANALYZER.R111.HIST'

äThe following line commands are available: ? (Query), V or S (View saved
report), I (Interactive reanalysis), B (Batch reanalysis), D (Delete), H
(Duplicate history), C (Copy fault entry), M (Move fault entry), X (XMIT fault
entry).ü

  Fault_ID Job/Tran User_ID Sys/Job Abend Date      Time
v  F11324 AFLN     AFLN     ENTW  S0C4  2012/08/14 13:17:03
  F11323 VKA20C71 VKA2     ENTW  S0C7  2012/08/14 13:16:38
  F11322 ADDAX     ADDA     ENTW  S0C7  2012/08/14 13:02:20
  F11321 VKA4      VKA4     ENTW  U4038 2012/08/14 13:01:15
  F11320 AU6RGB09 RZOO     ENTW  U3999 2012/08/14 12:59:43
  F11319 AU6RGB08 RZOO     ENTW  U3999 2012/08/14 12:59:15
```

Das richtige Fault History File – Pull-down-Menü File

```
File Options View Services Help
| 1. Last Accessed Fault History Files or Views... | Line 1 Col 1 80
| 2. Last Accessed Fault History File Entries... | Scroll ==> CSR
| 3. Clear Last Accessed Information |
| 4. List Views... | HIST'
| 5. Analyze MVS Dump Data Set... |
| 6. Fault History File Properties... | or S (View saved
| 7. New Fault History File Allocation... | ), D (Delete), H
| 8. Format CICS Auxiliary Trace Data Set... | entry), X (XMIT fault
| 9. Exit Fault Analyzer |
```

Fault_ID	Job/Tran	User_ID	Sys/Job	Abend	Date	Time
F11344	VKA20C7X	VKA2	ENTW	S0C7	2012/08/14	17:17:05
F11343	VKA20C72	VKA2	ENTW	S0C7	2012/08/14	17:12:00

Das richtige Fault History File – Pull-down-Menü File – Auswahl

```
File Options View Services Help
----- Last Accessed Fault History Files or Views -----
I | Line 1 Col 1 80
C | Enter the number corresponding to one of the following | Scroll ==> CSR
  | previously accessed fault history files or views and |
F | press Enter: |
  | 1. 'SYS4.FAULT.ANALYZER.R111.HIST' |
ä | 2. 'TUPR.FA.HIST.PPLEX' | (View saved
r | 3. | Delete), H
( | 4. | ), X (XMIT fault
e | 5. |
  | 6. |
  | 7. |
  | 8. | :05
  | 9. | :00
  | 10. | :29
  | | :26
  | | :04
  | | :25
-----
F11338 OPTE TA2TWS2 TEST S338 2012/08/14 16:25:15
F11337 ACHEFILE ACHE ENTW U4038 2012/08/14 16:11:35
```


Das richtige Fault History File – Ergebnis

```
File View Services Help
-----
IBM Fault Analyzer - Fault Entry List                               Line 1 Col 1 80
Command ==>                                                         Scroll ==> CSR

Fault History File or View :   'SYS4.FAULT.ANALYZER.R111.HIST'

äThe following line commands are available: ? (Query), V or S (View saved
report), I (Interactive reanalysis), B (Batch reanalysis), D (Delete), H
(Duplicate history), C (Copy fault entry), M (Move fault entry), X (XMIT fault
entry).ü

  Fault_ID Job/Tran User_ID Sys/Job Abend Date      Time
v  F11324 AFLN     AFLN     ENTW  S0C4  2012/08/14 13:17:03
  F11323 VKA20C71 VKA2     ENTW  S0C7  2012/08/14 13:16:38
  F11322 ADDAX     ADDA     ENTW  S0C7  2012/08/14 13:02:20
  F11321 VKA4      VKA4     ENTW  U4038 2012/08/14 13:01:15
  F11320 AU6RGB09 RZOO     ENTW  U3999 2012/08/14 12:59:43
  F11319 AU6RGB08 RZOO     ENTW  U3999 2012/08/14 12:59:15
```

Eine View wählen (nicht Coba)

- You can see a list of "Views"
- Bring down the File menu by putting your cursor on the word 'File' and ENTER
- Select option 4...

```
File Options View Services Help
4 1. Last Accessed Fault History Files or Views...
   2. Last Accessed Fault History File Entries...
   3. Clear Last Accessed Information
   4. List Views...
   5. Analyze MVS Dump Data Set...
   6. Fault History File Properties...
   7. Exit Fault Analyzer

Enter

Fault_ID Job/Tran User_ID Sys/Job EXEC_Pgm Abend Dat
F00003 DNET074S DNET074 DEMOMVS SAM1 S0C7 200
F00002 DNET074S DNET074 DEMOMVS SAM1 S0C7 200
F00001 DNET074S DNET074 DEMOMVS SAM1 S0C7 200

*** Bottom of data.
```

A **view** is a concatenation of one or more fault history files.

Views are defined by your systems programmer.

Eine View – Auswahl (nicht Coba)


... and select a view from the list

```
View List
Command ==> _____

Line commands: S (Select), B (Browse).

  Name      Description
  -
  -  ALL      ALL FAULT HISTORY FILES
  -  PROD     PROD FAULT HISTORY FILES
  -  S  TEST   TEST FAULT HISTORY FILES

*** Bottom of data.
```



A **view** is a concatenation of one or more fault history files.

Views are defined by your systems programmer.

Eine View – Auswahl – Ergebnis (nicht Coba)

```
File Options View Services Help
IBM Fault Analyzer - Fault Entry List          Line 1 Col 1 80
Command ==>                                     Scroll ==> CSR

Fault History File or View : (TEST) TEST FAULT HISTORY FILES

{The following line commands are available: ? (Query), V (View real-time
report), I (Interactive reanalysis), B (Batch reanalysis), D (Delete), H
(Duplicate history).}

Fault_ID Job/Tran User_ID Sys/Job EXEC_Pgm Abend Date Time
___ F01559 DNET074X DNET074 DEMOMVS SAM1 S0C7 2006/09/29 08:39:26
___ F01558 DNET5141 DNET514 DEMOMVS LABINARC S522 2006/09/29 08:14:21
___ F01557 DEM053 DEM053 DEMOMVS REGIOA S0CB 2006/09/29 07:54:45
___ F01556 DEM
___ F01555 MSO
___ F01554 TCP
___ F01553 DNE
___ F01552 DNET074B DNET074 DEMOMVS SAM1 S0C7 2006/09/28 17:08:59
___ F01551 SYS029S1 SYS029 DEMOMVS SAM1 S0C7 2006/09/28 15:11:20
___ F01550 CDAT SYS029 CICSAOR4 DFHSIP ASRA 2006/09/28 14:54:57
___ F01549 EPSL SYS029 CICSAOR4 DFHSIP SNAP 2006/09/28 14:53:13
___ F01548 DNET074A DNET074 DEMOMVS SAM1 S0C7 2006/09/28 14:27:22
```

The selected view is opened

Tip: You can also open a view by entering the view name in parentheses, like this: **(TEST)**

Einträge finden – Find / Match – 1

```
File View Services Help
-----
IBM Fault Analyzer - Fault Entry List                               Line 1 Col 1 80
Command ==> f vka2                                               Scroll ==> CSR

Fault History File or View :      'SYS4.FAULT.ANALYZER.R111.HIST'

äThe following line commands are available: ? (Query), V or S (View saved
report), I (Interactive reanalysis), B (Batch reanalysis), D (Delete), H
(Duplicate history), C (Copy fault entry), M (Move fault entry), X (XMIT fault
entry).ü

Fault_ID Job/Tran User_ID Sys/Job Abend Date      Time
F11324 AFLN      AFLN      ENTW  S0C4  2012/08/14 13:17:03
F11323 VKA20C71 VKA2      ENTW  S0C7  2012/08/14 13:16:38
F11322 ADDAX     ADDA      ENTW  S0C7  2012/08/14 13:02:20
F11321 VKA4      VKA4      ENTW  U4038 2012/08/14 13:01:15
F11320 AU6RGB09 RZOO      ENTW  U3999 2012/08/14 12:59:43
F11319 AU6RGB08 RZOO      ENTW  U3999 2012/08/14 12:59:15
```

Einträge finden – Find / Match – 2

File View Services Help

IBM Fault Analyzer - Fault Entry List

Line 1 Col 1 80

Command ==>

Scroll ==> CSR

Fault History File or View : 'SYS4.FAULT.ANALYZER.R111.HIST'

äThe following line commands are available: ? (Query), V or S (View saved report), I (Interactive reanalysis), B (Batch reanalysis), D (Delete), H (Duplicate history), C (Copy fault entry), M (Move fault entry), X (XMIT fault entry).ü

Fault_ID	Job/Tran	User_ID	Sys/Job	Abend	Date	Time
F11347	IMSUM412	TA2IMS3	ENTW	U0240	2012/08/14	18:14:11
F11346	IMSUM412	TA2IMS3	ENTW	U0240	2012/08/14	17:57:49
F11345	IMSUM412	TA2IMS3	ENTW	U0240	2012/08/14	17:56:54
F11344	VKA20C7X	VKA2	ENTW	S0C7	2012/08/14	17:17:05
F11343	VKA20C72	VKA2	ENTW	S0C7	2012/08/14	17:12:00
F11342	ACAZP01	ACAZ	ENTW	S0C4	2012/08/14	16:57:29
F11341	EZBF\$	EZBF	ENTW	S013	2012/08/14	16:44:26
F11340	AFFBG210	AFFB	ENTW	U4080	2012/08/14	16:44:04

Einträge finden – Find / Match – 3

File View Services Help

IBM Fault Analyzer - Fault Entry List

Line 1 Col 1 80

Command ==>

Scroll ==> CSR

Fault History File or View : 'SYS4.FAULT.ANALYZER.R111.HIST'

äThe following line commands are available: ? (Query), V or S (View saved report), I (Interactive reanalysis), B (Batch reanalysis), D (Delete), H (Duplicate history), C (Copy fault entry), M (Move fault entry), X (XMIT fault entry).ü

Fault_ID	Job/Tran	User_ID	Sys/Job	Abend	Date	Time
F11347	IMS*	TA2IMS3	ENTW	U0240	2012/08/14	18:14:11
F11346	IMSUM412	TA2IMS3	ENTW	U0240	2012/08/14	17:57:49
F11345	IMSUM412	TA2IMS3	ENTW	U0240	2012/08/14	17:56:54
F11344	VKA20C7X	VKA2	ENTW	S0C7	2012/08/14	17:17:05
F11343	VKA20C72	VKA2	ENTW	S0C7	2012/08/14	17:12:00
F11342	ACA2P01	ACAZ	ENTW	S0C4	2012/08/14	16:57:29
F11341	EZBF\$	EZBF	ENTW	S013	2012/08/14	16:44:26
F11340	AFFBG210	AFFB	ENTW	U4080	2012/08/14	16:44:04

Einträge finden – Find / Match – 4

File View Services Help

IBM Fault Analyzer - Fault Entry List

Line 1 Col 1 80

Command ==>

Scroll ==> CSR

Fault History File or View : 'SYS4.FAULT.ANALYZER.R111.HIST'

äThe following line commands are available: ? (Query), V or S (View saved report), I (Interactive reanalysis), B (Batch reanalysis), D (Delete), H (Duplicate history), C (Copy fault entry), M (Move fault entry), X (XMIT fault entry).ü

Fault_ID	Job/Tran	User_ID	Sys/Job	Abend	Date	Time
F11347	IMSJM412	TA2IMS3	ENTW	U0240	2012/08/14	18:14:11
F11346	IMSJM412	TA2IMS3	ENTW	U0240	2012/08/14	17:57:49
F11345	IMSJM412	TA2IMS3	ENTW	U0240	2012/08/14	17:56:54
F11300	IMSTM07	TA2IMS3	ENTW	U0240	2012/08/14	11:17:01
F11266	IMSJM412	TA2IMS3	ENTW	S0C7	2012/08/13	15:16:34
F11265	IMSTM312	TA2IMS3	ENTW	U0240	2012/08/13	14:50:30
F11243	IMSTM41	TA2IMS3	ENTW	U0240	2012/08/13	07:49:08
F11237	IMSTM08	TA2IMS3	ENTW	S806	2012/08/13	01:02:18
F11212	IMSTM312	TA2IMS3	ENTW	S806	2012/08/10	13:11:26
F11211	IMSTM311	TA2IMS3	ENTW	S806	2012/08/10	13:08:14
F11210	IMSTM04	TA2IMS3	ENTW	S806	2012/08/10	13:04:46

Einträge finden – Find / Match – 5 (keylist on)

```
PRIVATE                               IDI Keylist IDIPIKYB Change           Row 1 to 12 of 24
Command ==>>                          Scroll ==>> PAGE

Make changes and then select File action bar.

Keylist Help Panel Name . . .

Key      Definition                      Format      Label
F1 . . . HELP                          SHORT      Help
F2 . . . SPLIT                          NO         Split
F3 . . . EXIT                          SHORT      Exit
F4 . . . MATCH CSR                      SHORT      MatchCSR
F5 . . . RPTFIND                        SHORT      RptFind
F6 . . . ACTIONS                        SHORT      Actions
F7 . . . UP                            SHORT      Up
F8 . . . DOWN                          SHORT      Down
F9 . . . SWAP                          NO         Swap
F10 . . LEFT                          SHORT      Left
F11 . . RIGHT                          SHORT      Right
F12 . . MATCH ALL                      SHORT      MatchALL
```

Einträge finden – Find / Match – 6

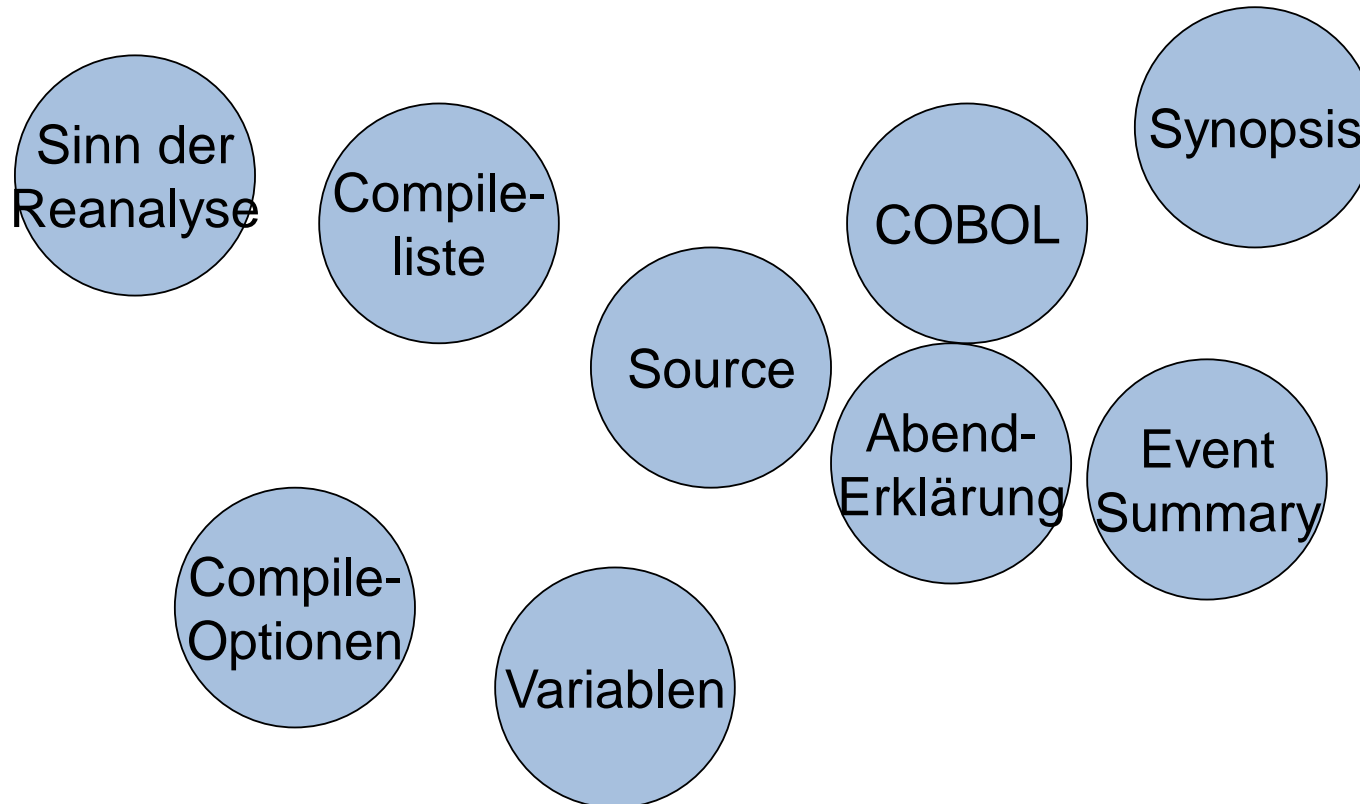
- Cursor positionieren und PF-Taste drücken
- einfach mal ausprobieren ;-))

weitere Commands

- Line Commands
 - ? Informationen über den Dump
 - H Duplikate ansehen
 - I interaktive Analyse starten
 - Primary Commands
 - Cols Spalten ansehen, anpassen, ordnen
- Ausprobieren, wie Sie am besten arbeiten können . . .

-
- Einführung und Überblick
 - Exkurs in die Theorie
 - Produktüberblick
 - Realtime Analysis
 - Online Interface
 - ➔ • Interactive Reanalysis / Batch Reanalysis
 - CICS / DB2 / IMS
 - Compileliste bereitstellen
 - Optionen und weitere Tipps
 - Zusammenfassung – Diskussion – Austausch

Begriffe



- tiefere (?) Details zu Programmen
- Source hinterlegen – Code
- Source hinterlegen – Variable / Struktur

- Aber: nicht immer ist es möglich, zu mappen!
- Ziel: Auch ohne Source-Unterstützung eine Dump-Analyse hervorragend zu bewältigen.

Interactive Reanalysis

starten

```
File  Options  View  Services  Help
-----
IBM Fault Analyzer - Fault Entry List                10 of 587 rows matched
Command ==>                                         Scroll ==> CSR

Fault History File or View :      'SYS4.FAULT.ANALYZER.R111.HIST'

äThe following line commands are available: ? (Query), V or S (View saved
report), I (Interactive reanalysis), B (Batch reanalysis), D (Delete), H
(Duplicate history), C (Copy fault entry), M (Move fault entry), X (XMIT fault
entry).ü

  Fault_ID Job/Tran User_ID  Sys/Job  Abend  Date       Time
  F11452 VKA20C42 VKA2     ENTW   S0C4   2012/08/16 16:25:25
  F11451 VKA20C41 VKA2     ENTW   S0C4   2012/08/16 16:25:25
  F11446 VKA20CB3 VKA2     ENTW   S0CB   2012/08/16 15:36:58
  F11445 VKA20CB2 VKA2     ENTW   S0CB   2012/08/16 15:36:57
  F11437 VKA28061 VKA2     ENTW   S806   2012/08/16 14:37:10
  F11436 VKA20C74 VKA2     ENTW   S0C7   2012/08/16 14:37:05
  F11435 VKA20C73 VKA2     ENTW   S0C7   2012/08/16 14:36:58
  F11430 VKA20C72 VKA2     ENTW   S0C7   2012/08/16 13:24:52
  F11370 VKA20CB1 VKA2     ENTW   S0CB   2012/08/15 11:46:00
  F11323 VKA20C71 VKA2     ENTW   S0C7   2012/08/14 13:16:38

**      Bottom of data.
```



Abfrage für Sourcecodeunterstützung für jedes Programm

```
File  Options  View  Services  Help
+-----+-----+-----+-----+-----+
| Command ==>
|
| Compiler listing or side file not found for:
| Module Name . . . : TES39
| Program Name . . . : TES39
| Entry Point Name . : TES39
| Loaded From . . . : SYS4.TEST.PGMLIB
| Language . . . . . : COBOL
| Compile Date . . . : 2012/08/14 (YYYY/MM/DD)
| Compile Time . . . : 13:10:23 (HH:MM:SS)
|
| Select one of the following options and press Enter:
| 2 1. Continue without compiler listing or side file for this program
|   2. Specify compiler listing or side file to use for this program
|   3. Retry search for compiler listing or side file for this program
|   4. Do not prompt again for any missing listing or side file
|   5. Only prompt for the point of failure program listing or side file
|   6. Show program listing/side file search trace
|
+-----+-----+-----+-----+-----+
** Bottom of data.
```




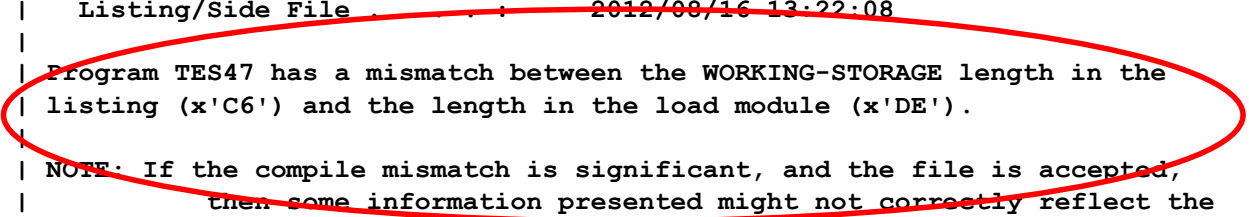
Compileliste (oder Side-File) anbieten

```
File Options View Services Help
+----- Compiler Listing Not Found -----+
| Command ==>                               |
+----- Specify Compiler Listing or Side File -----+
| Command ==>                               |
|                                             |
| Specify the data set and member name containing the compiler listing or |
| side file and press Enter.               |
|                                             |
| Data Set Name . . . . 'SYS4.DEBUG.LISTFILE' |
| Member . . . . . tes39d9                   |
|                                             |
+-----+
| 2 1. Continue without compiler listing or side file for this program |
|    2. Specify compiler listing or side file to use for this program  |
|    3. Retry search for compiler listing or side file for this program |
|    4. Do not prompt again for any missing listing or side file       |
|    5. Only prompt for the point of failure program listing or side file |
|    6. Show program listing/side file search trace                    |
|                                             |
+-----+
** Bottom of data.
```



Timestamp passt nicht

```
File  Options  View  Services  Help
+-----+
|                                     | Line 1 Col 1 76 |
| Command ==>                        | Scroll ==> CSR  |
|                                     |                 |
| Listing/Side File . . . . . :      | VKA2.DUMP.COMPILE.TES47 |
|                                     |                 |
| Compile Date/Time:                |                 |
|   Load Module . . . . . :          | 2012/08/14 13:10:40 |
|   Listing/Side File . . . . . :    | 2012/08/16 13:22:08 |
|                                     |                 |
| Program TES47 has a mismatch between the WORKING-STORAGE length in the |
| listing (x'C6') and the length in the load module (x'DE'). |
|                                     |                 |
| NOTE: If the compile mismatch is significant, and the file is accepted, |
| then some information presented might not correctly reflect the |
| conditions at the time of the fault. |
|                                     |                 |
| Press ENTER to continue with this listing, or F3/F12 to cancel. |
|                                     |                 |
| *** Bottom of data. |
|                                     |                 |
+-----+
```



„Haupt“menü

File Options View Services Help

Interactive Reanalysis Report

Line 1 Col 1 80

Command ==>

Scroll ==> CSR

JOBNAME: VKA20C71 SYSTEM ABEND: 0C7

ENTW

2012/08/14 13:16:38

Fault Summary:

Module TES47, program TES47, offset X'A3A': Abend S0C7 (Data Exception).

Select one of the following options to access further fault information:

1. Synopsis
2. Event Summary
3. Open Files
4. Storage Areas
5. Messages
6. Language Environment Heap Analysis
7. Abend Job Information
8. Fault Analyzer Options

äFault Analyzer maximum storage allocated: 2.27 megabytes.ü

*** Bottom of data.

„Haupt“menü (mit dem richtigen Sidefile)

```
File Options View Services Help
```

```
-----  
Interactive Reanalysis Report
```

```
Line 1 Col 1 80
```

```
Command ==>
```

```
Scroll ==> CSR
```

```
JOBNAME: VKA20C71  SYSTEM ABEND: 0C7
```

```
ENTW
```

```
2012/08/17 15:29:25
```

```
Fault Summary:
```

```
Module TES47, program TES47, source line # 103 : Abend S0C7 (Data Exception).
```

```
Select one of the following options to access further fault information:
```

1. Synopsis
2. Event Summary
3. Open Files
4. Storage Areas
5. Messages
6. Language Environment Heap Analysis
7. Abend Job Information
8. Fault Analyzer Options

```
äFault Analyzer maximum storage allocated: 2.27 megabytes.ü
```

```
*** Bottom of data.
```

Sicht Produktion / andere Plexe – nur Coba

```
File Options View Services Help
-----
IBM Fault Analyzer - Fault Entry List                               Line 1 Col 1 80
Command ==>                                                         Scroll ==> CSR

Fault History File or View : 'TUPR.FA.HIST.PPLEX'

äThe following line commands are available: ? (Query), V or S (View saved
report), I (Interactive reanalysis), B (Batch reanalysis), D (Delete), H
(Duplicate history), C (Copy fault entry), M (Move fault entry), X (XMIT fault
entry).ü

  Fault_ID Job/Tran User_ID  Sys/Job  Abend  Date       Time
  F04157 IMSPM104 TA2IMS3  TPON    U4080  2012/08/16 14:48:50
  F04154 IM07M419 TA2IMS3  P007    S0C7   2012/08/16 14:33:08

-> 3. Interactive Reanalysis Options...

-> Reanalysis Options Data Set Control:
  Options data set name . . : 'TUPR.FA.OPTIONS'
  Options member name . . . : EXIT2      (If PDS or PDSE)
  Use this data set during
  reanalysis. . . . . : Y (Y/N)

-> Es werden beim Eintieg automatisch die richtigen Compilelisten dazugelesen (siehe auch zWiki).
```

„Haupt“menü – wie geht es weiter . . .

File View Services Help

Interactive Reanalysis Report

Line 1 Col 1 80

Command ==>

Scroll ==> CSR

JOBNAME: VKA20C71 SYSTEM ABEND: 0C7

ENTW 2012/08/17 15:29:25



Fault Summary:

Module TES47, program TES47, source line # 103 : Abend S0C7 (Data Exception).

Select one of the following options to access further fault information:

1. Synopsis
2. Event Summary
3. Open Files
4. Storage Areas
5. Messages
6. Language Environment Heap Analysis
7. Abend Job Information
8. Fault Analyzer Options

äFault Analyzer maximum storage allocated: 2.27 megabytes.ü

*** Bottom of data.

Sourcecode mit Abbruchstelle

```
File View Services Help
-----
Program TES47 Compiler Listing                               Line 790 Col 1 80
Command ==>                                               Scroll ==> CSR
JOBNAME: VKA20C71  SYSTEM ABEND: 0C7                      ENTW      2012/08/17  15:29:25
      000009E8 5820 913C      L      R2,316(,R9)
      000009EC F298 D148 201E PACK  328(10,R13),30(9,R2)
      000009F2 960F D151      OI      337(R13),15
      000009F6 F248 D158 2028 PACK  344(5,R13),40(9,R2)
      000009FC 960F D15C      OI      348(R13),15
      00000A00 FC94 D148 D158 MP     328(10,R13),344(5,R13)
      00000A06 F844 8056 D14D ZAP   86(5,R8),333(5,R13)
000102 00101      DISPLAY '* ERGEBNIS MULTIPLIKATION : ' FELD-ERGEBNIS-2
      00000A0C 4DE0 914A      BAS     R14,330(,R9)
      00000A10 5820 905C      L      R2,92(,R9)
      00000A14 58F0 202C      L      R15,44(,R2)
      00000A18 4110 A42A      LA     R1,1066(,R10)
      00000A1C 0DEF          BASR   R14,R15
000103 00102      COMPUTE FELD-ERGEBNIS-3 = FELD-5 / FELD-6
      00000A1E 4DE0 914A      BAS     R14,330(,R9)
      00000A22 5820 913C      L      R2,316(,R9)
      00000A26 F298 D148 2032 PACK  328(10,R13),50(9,R2)
      00000A2C 960F D151      OI      337(R13),15
      00000A30 F248 D158 203C PACK  344(5,R13),60(9,R2)
      00000A36 960F D15C      OI      348(R13),15
      00000A3A FD94 D148 D158 DP     328(10,R13),344(5,R13)
      00000A40 F874 D160 D148 ZAP   352(8,R13),328(5,R13)
      00000A46 4F30 D160      CVB    R3,352(,R13)
      00000A4A 5030 805C      ST     R3,92(,R8)
000104 00103      DISPLAY '* ERGEBNIS DIVISION : ' FELD-ERGEBNIS-3
      00000A4E 4DE0 914A      BAS     R14,330(,R9)
```

Synopsis

```
File View Services Help
-----
Synopsis                                     Line 1 Col 1 80
Command ==>                               Scroll ==> CSR
JOBNAME: VKA20C71  SYSTEM ABEND: 0C7        ENTW      2012/08/17  15:29:25

A system abend 0C7 occurred in module TES47 program TES47 at offset X'A3A'.

A program-interruption code 0007 (Data Exception) is associated with this aben

  A decimal digit or sign was invalid.

The cause of the failure was program TES47 in module TES47.  The COBOL source

Source
Line #
000103    00102      COMPUTE FELD-ERGENIS-3 = FELD-5 / FELD-6

The COBOL source code for data fields involved in the failure:

Source
Line #
000037    00036      10 FELD-ERGENIS-3          PIC S9(009) BINARY.
000061    00060      10 FELD-5                PIC 9(009).
000063    00062      10 FELD-6                PIC 9(009).

Data field values at time of abend:

FELD-ERGENIS-3 = 0
FELD-5         = X'F0F0F0F0F0F04C4C4C'      *** Cause of error ***
FELD-6         = 66
```


Event Summary

```
File View Services Help
-----
Event Summary                               Line 1 Col 1 80
Command ==>>                               Scroll ==>> CSR
JOBNAME: VKA20C71  SYSTEM ABEND: 0C7        ENTW      2012/08/17  15:29:25

äThe following events are presented in chronological order.ü

Event          Fail Module  Program  EP
#  Type        Point Name   Name     Name     Event Location (*)  Descriptio
 1  Call        TES39    TES39    TES39    L#76 E+560          From SYS4.
 2  Call        IGZCPAC  n/a      IGZCFCC  E+2C0              INITIAL LO
 3  Abend S0C7  ***** TES47    TES47    TES47    L#103 E+A3A        From SYS4.

(*) One or more of the following abbreviations might appear in the "Event Loca

F#n Source file number (refer to detailed event information for file iden
L#n Source file line number
S#n Listing file statement number (refer to detailed event information fo
M+x Offset from start of load module
P+x Offset from start of program
E+x Offset from start of entry point

*** Bottom of data.
```

Event Summary – Event 3 – 1

```
File View Services Help
-----
Event 3 of 3: Abend S0C7 *** Point of Failure ***                               Line 1 Col 1 80
Command ==>                                                                    Scroll ==> CSR
JOBNAME: VKA20C71  SYSTEM ABEND: 0C7          ENTW          2012/08/17  15:29:25

Previous Event Details

Abend Code. . . . . : S0C7
Program-Interruption Code . : 0007 (Data Exception)
  A decimal digit or sign was invalid.

The source code below was executed via the following sequence of PERFORM state
Source
Line #
000078    00077      WHEN          (1) PERFORM FKT-1

COBOL Source Code:
Source
Line #
000103    00102      COMPUTE FELD-ERGEBNIS-3 = FELD-5 / FELD-6

Data Field Declarations:
Source
Line #
000037    00036      10 FELD-ERGEBNIS-3          PIC S9(009) BINARY.
000061    00060      10 FELD-5                   PIC 9(009).
000063    00062      10 FELD-6                   PIC 9(009).
```

Event Summary – Event 3 – 2

```
File View Services Help
-----
Event 3 of 3: Abend S0C7 *** Point of Failure ***                               Line 1 Col 1 80
Command ==>                                                                    Scroll ==> CSR
JOBNAME: VKA20C71  SYSTEM ABEND: 0C7      ENTW      2012/08/17  15:29:25

Data Field Values:
  FELD-ERGBNIS-3 = 0
  FELD-5          = X'F0F0F0F0F0F04C4C'    *** Cause of error ***
  FELD-6          = 66

The listing file used for the above was found via Compiler TEST option in SYS4

Load Module Name. . . . . :      SYS4.TEST.PGMLIB(TES47)
  At Address. . . . . :      36EB0098
  Load Module Length. . . . :      X'5F68'
  Link-Edit Date and Time . :      2012/08/17  15:28:40

Program and Entry Point Name:      TES47
  At Address. . . . . :      36EB0098      (Module TES47 offset X'0')
  Program Length. . . . . :      X'4A0A'
  Program Language. . . . . :      COBOL (Compiled using IBM Enterprise COBOL for z
  Compiler Options Used . . . :      ADV APOST ARITH(COMPAT) NOAWO NOCURRENCY DATA(31
                                     NOEXPORTALL NOFASTSRT INTDATE(ANSI) LIB NOLIST M
                                     OUTDD(SYSOUT) NOPFDGSGN RENT RES RMODE(ANY) NOSEQ
                                     TEST(HOOK NOSEPARATE NOEJPD) NOTHREAD TRUNC(STD)
```

Event Summary – Event 3 – 3

```
File View Services Help
-----
Event 3 of 3: Abend S0C7 *** Point of Failure ***                               Line 1 Col 1 80
Command ==>                                                                    Scroll ==> CSR
JOBNAME: VKA20C71  SYSTEM ABEND: 0C7          ENTW          2012/08/17  15:29:25

Machine Instruction . . . . :          FD94D148D158  DP          328(10,R13),344(5,R13)
  At Address. . . . . :          36EB0AD2 (Program TES47 offset X'A3A')
  AMODE . . . . . :          31
  Failing Operand . . . . :          First operand
  First Operand Address . . :          0001D4C0 (244544 bytes of storage addressable)
  First Operand Length. . . :          10
  First Operand Storage . . :          00000000 00000000 CCCF *.....*
  Second Operand Address. . :          0001D4D0 (244528 bytes of storage addressable)
  Second Operand Length . . :          5
  Second Operand Storage. . :          00000006 6F *....?*


Associated Messages

CEE3207S    The system detected a data exception (System Completion Code=0C7).

Program Status Word (PSW) . :          078D1000 B6EB0AD8

General Purpose Registers:
  R0: 0001D598 (244328 bytes of storage addressable)
  R1: 00000000 (2048 bytes of storage addressable)

etc. . .

Associated Storage Areas 
```

Interactive Reanalysis

Event Summary – Event 3 – 3 – Storage

```
File View Services Help
-----
Associated Storage Areas                                     Line 1 Col 1 80
Command ==>                                               Scroll ==> CSR
JOBNAME: VKA20C71  SYSTEM ABEND: 0C7                      ENTW      2012/08/17  15:29:25

Task Global Table (TGT) at address 000400D0 for length 388

WORKING-STORAGE SECTION
- Collapse hex - Collapse level 88
Off Hex Value          Data Value          Source (Starting a
BLW=0000 at address 36A11170
  0 E3C5E2F4 F740F1F7 61F0F861 F1F240D3 *TES47 17/08/12 L* 77 LEVEL PICTURE
 10 E5F0F3F7                                *V037                *
                                01 HILFSFELDER.
 18 E3C5E2F4 F7404040                       *TES47                * 05 PGM-NAME
. . .
LINKAGE SECTION
BLL=0000 has not been assigned an address
Off Hex Value          Data Value          Source (Starting a
*** Base locator storage at 70F0F0F0 not accessible ***

Off Hex Value          Data Value          Source (Starting a
BLL=0003 at address 36A11058
                                01 EINGABE-ZE
  0 F0F0F0F0 F0F0F0F0 F1                       1 10 I1-MAX-
  9 4F                                           *!                * 10
. . .
INDEXED BY Data Items
Line # Name           Hex Value Occurrence Occurs Table
000042 IDX-2        00000014           3      5 TAB-NR2
000045 IDX-1        0000001E           4      7 TAB-FELD
```

DB2-Informationen – Einstieg

```
File View Services Help
-----
Interactive Reanalysis Report                               Line 1 Col 1 80
Command ==> _____ Scroll ==> CSR
JOBNAME: DNET074X  SYSTEM ABEND: 0CA                      DEMOMVS   2006/12/19  14:27:40

Fault Summary:
Module PHONEP01, program PHONEP01, compiler listing file
DNET074.DEMOS.PLI.LISTING(PHONEP01) statement # 48 : Abend S0CA
(Decimal-Overflow Exception)

Select one of the following  information:
 1. Synopsis
 2. Event Summary
 3. DB2 Information
 4. Open Files
 5. Storage Areas
 6. Messages
 7. Language Environment Heap Analysis
 8. Abend Job Information
 9. Fault Analyzer Options

{Fault Analyzer maximum storage allocated: 1.45 megabytes.}

*** Bottom of data.
```



system-wide info ... get DB2 info

DB2-Informationen – Überblick

```
File View Services Help
DB2 Information Line 1 Col 1 80
Command ==> Scroll ==> CSR
JOBNAME: DNET074X SYSTEM ABEND: 0CA DEMOMVS 2006/12/19 14:27:40

DB2 Subsystem DSNAP

DB2 Version . . . . . : V7R1M0
Plan Name . . . . . : PHONEP01 (Bound 2006/12/19 14:27:40)
Plan Owner . . . . . : DNET424
Database Request Module Name: DNET074.DEMOS.DBRMLIB(PHONEP01)
Consistency Token . . . . . : X'17FAE085117EB674'
Primary Authorization ID. . : DNET424
Current SQL ID. . . . . : DNET424

Last Executed SQL Statement:
List
Stmt #
000436 EXEC SQL UPDATE DSN8710.VEMPLP
000436 SET PHONENUMBER = :NEWNO /- CHANGE PHONE NO
000436 WHERE EMPLOYEEENUMBER = :ENO

Fault Analyzer Event #. . . : 7 (Program PHONEP01)

Input Host Variables:
Name and Data Type. . . . : IOAREA.NEWNO CHARACTER(4)
At Address. . . . . : 1FB8324C
Data Value. . . . . : RAM

Name and Data Type. . . . : IOAREA.ENO CHARACTER(6)
```



DB2 information

Interactive Reanalysis

DB2-Informationen – SQL-CA

```
File View Services Help
Event 7 of 7: Abend SOCA *** Point of Failure ***           Line 90 Col 1 80
Command ==> Scroll ==> CSR
JOBNAME: DNET074X  SYSTEM ABEND: OCA                       DEMOMVS   2006/12/19  14:27:40
      SQLCODE 0 Explanation
16  (10)  SQLERRML  0000                                *..                *
18  (12)  SQLERRMC  40404040 40404040 40404040 40404040 *                *
34  (22)                40404040 40404040 40404040 40404040 *                *
50  (32)                40404040 40404040 40404040 40404040 *                *
66  (42)                40404040 40404040 40404040 40404040 *                *
82  (52)                40404040 4040                                *                *
88  (58)  SQLERRP   C4E2D540 40404040                                *DSN                *
96  (60)  SQLERRD   00000000 00000000 00000001 FFFFFFFF *.....            *
112 (70)                00000000 00000000                                *.....            *
120 (78)  SQLWARN   40404040 40404040 404040                                *                *
131 (83)  SQLSTATE  F0F0F0F0 F0                                *00000              *
      SQLSTATE 00000 Explanation

Associated Messages
CEE3210S The system detected a decimal-overflow exception (System Completion
Code=OCA).

Associated Open Files
File Name . . . . . : CARDIN
File Name . . . . . : REPORT

Associated Storage Areas
*** Bottom of data.
```

Tab here to see details about open files

Storage Areas associated with the program

Enter

end of program detail ... go to Associated Storage Areas

Files

```
File View Services Help
-----
System-Wide Open Files                                     Line 1 Col 1 80
Command ==>                                             Scroll ==> CSR
JOBNAME: VKA20C71  SYSTEM ABEND: 0C7                    ENTW    2012/08/17  15:29:25

Non-Event-Related Open Files

File Name . . . . . : CEEDUMP
File Name . . . . . : SYSIN
File Name . . . . . : SYSOUT

*** Bottom of data.
```

Files – SYSIN

```
File View Services Help
-----
File Information
Command ==>
JOBNAME: VKA20C71  SYSTEM ABEND: 0C7          ENTW          2012/08/17  15:29:25
Line 1 Col 1 80
Scroll ==> CSR

File Name . . . . . :          SYSIN
Data Set Name . . . . . :      VKA2.VKA20C71.JOB00979.D0000101.?
File Attributes . . . . . :    ORGANIZATION=SEQUENTIAL, ACCESS MODE=n/a, RECFM=
Last I/O Function . . . . . :      READ
Open Status . . . . . :          INPUT

Current Record. . . . . :      Record data length 80
Address  Offset      Hex
00057FB0          F0F0F0F0 F0F0F0F0 F14FF0F0 F0F0F0F0  F0F1F14F F0F0F0F0 F
00057FD0          +20  F0F0F0F0 F0F0F24F F0F0F0F0 F0F0F0F4  F44FF0F0 F0F0F0F0 4
00057FF0          +40  F0F0F0F6 F64FF0F0 40404040 40404040

Associated File Control Blocks

*** Bottom of data.
```

Beispiel

- siehe <http://publib.boulder.ibm.com/infocenter/ieduasst/stgv1r0/topic/com.ibm.iea.faultan/faultan/6.1z/TrainingEducation/IARootCause/FA06InterReanalysisExample.pdf>

Beispiel

- Optionen überprüfen (Pull-down Options)
- statt „I“ „B“ eingeben
- und weg damit (sub)
- Ausgabe in SDSF ansehen

Batch Reanalysis

Options auswählen . . .

```
File Options View Services Help
-----
IBM F | 2 1. Fault Analyzer Preferences... | Line 1 Col 1 80
Comma | 2. Batch Reanalysis Options... | Scroll ==> CSR
      | 3. Interactive Reanalysis Options... |
Fault +-----+

äThe following line commands are available: ? (Query), V or S (View saved
report), I (Interactive reanalysis), B (Batch reanalysis), D (Delete), H
(Duplicate history), C (Copy fault entry), M (Move fault entry), X (XMIT fault
entry).ü

Fault_ID Job/Tran User_ID Sys/Job Abend Date Time
F04157 IMSPM104 TA2IMS3 TPON U4080 2012/08/16 14:48:50
F04154 IM07M419 TA2IMS3 P007 S0C7 2012/08/16 14:33:08
F04153 IM07M82 TA2IMS3 P007 S0C7 2012/08/16 14:33:03
F04152 IM07M436 TA2IMS3 P007 S0C7 2012/08/16 14:32:58
F04141 IMSPM49 TA2IMS3 TPON S0C7 2012/08/16 10:41:52
F04135 TTK00830 RZO1 P007 U4090 2012/08/16 08:12:19
```

Batch Reanalysis

und . . . Options füllen

```
File View Services Help
-----
Batch Reanalysis Options                               Line 1 Col 1 80
Command ==>                                           Scroll ==> CSR

Press PF3 to save options or PF12 to cancel.

General Options:
Options line for batch
reanalysis. . . . . :
Redisplay this panel
before each reanalysis. . : Y (Y/N) <--- Y nur wenn man dieses Panel immer wieder sehen will ;-)
Display panel to edit
generated JCL . . . . . : Y (Y/N) <--- Y nur wenn man die JCL sehen will
Job card style. . . . . : S (P=Parameters, S=Statements) <--- mit S kann man einfach eine Jobkarte kopieren

Job Card Statements:
==> //VKA2FAB JOB (000947,TEST,,,,,9900),'ZIT P 2.21,SEIDLER',
==> //          MSGCLASS=T,CLASS=G,
==> //          NOTIFY=&SYSUID,MSGLEVEL=(1,1)
==>

Reanalysis Report:
Destination . . . . . :

Reanalysis Options Data Set Control:
Options data set name . . : 'TUPR.FA.OPTIONS'
Options member name . . . : EXIT2      (If PDS or PDSE)
Use this data set during
reanalysis. . . . . : Y (Y/N)
Edit the options data set
before reanalysis . . . . : N (Y/N)
```

Batch Reanalysis

Batch Reanalyse anstoßen . . .

```
File Options View Services Help
-----
IBM Fault Analyzer - Fault Entry List                               Line 1 Col 1 80
Command ==>                                                       Scroll ==> CSR

Fault History File or View : 'TUPR.FA.HIST.PPLEX'

äThe following line commands are available: ? (Query), V or S (View saved
report), I (Interactive reanalysis), B (Batch reanalysis), D (Delete), H
(Duplicate history), C (Copy fault entry), M (Move fault entry), X (XMIT fault
entry).ü

  Fault_ID Job/Tran User_ID Sys/Job Abend Date      Time
  F04157 IMSPM104 TA2IMS3  TPON   U4080 2012/08/16 14:48:50
  F04154 IM07M419 TA2IMS3  P007   SOC7 2012/08/16 14:33:08
  F04153 IM07M82  TA2IMS3  P007   SOC7 2012/08/16 14:33:03
  b F04152 IM07M436 TA2IMS3  P007   SOC7 2012/08/16 14:32:58
  F04141 IMSPM49  TA2IMS3  TPON   SOC7 2012/08/16 10:41:52
  F04135 TTK00830 RZO1     P007   U4090 2012/08/16 08:12:19

-----

-> Options-Bild kommt zum Prüfen
-> Sub wird im Edit angezeigt
-> SUBMIT
```

Batch Reanalysis

... und ansehen in SDSF / EJES / etc.

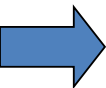
```
SDSF JOB DATA SET DISPLAY - JOB VKA2FAB (JOB02397) LINE 1-6 (6)
COMMAND INPUT ==> SCROLL ==> CSR
NP DDNAME StepName ProcStep DSID Owner C Dest Rec-Cnt Page
JESJCLIN 1 VKA2 T 24
JESMSGLG JES2 2 VKA2 T LOCAL 34
JESJCL JES2 3 VKA2 T LOCAL 26
JESYSMSG JES2 4 VKA2 T LOCAL 236
$INTTEXT JES2 5 VKA2 A 11
s SYSPRINT RUNDA 101 VKA2 T LOCAL 12,601
```

```
SDSF OUTPUT DISPLAY VKA2FAB JOB02397 DSID 101 LINE 0 COLUMNS 02- 81
COMMAND INPUT ==> SCROLL ==> CSR
***** TOP OF DATA *****
* IBM Fault Analyzer for z/OS V11R1M0 (PM60755 2012/03/22) *
* * *
* Copyright IBM Corp. 2000, 2012. All rights reserved. *
*****
JOBNAME: IM07M436 SYSTEM ABEND: 0C7 P007 2012/08/16 14:32:58
```

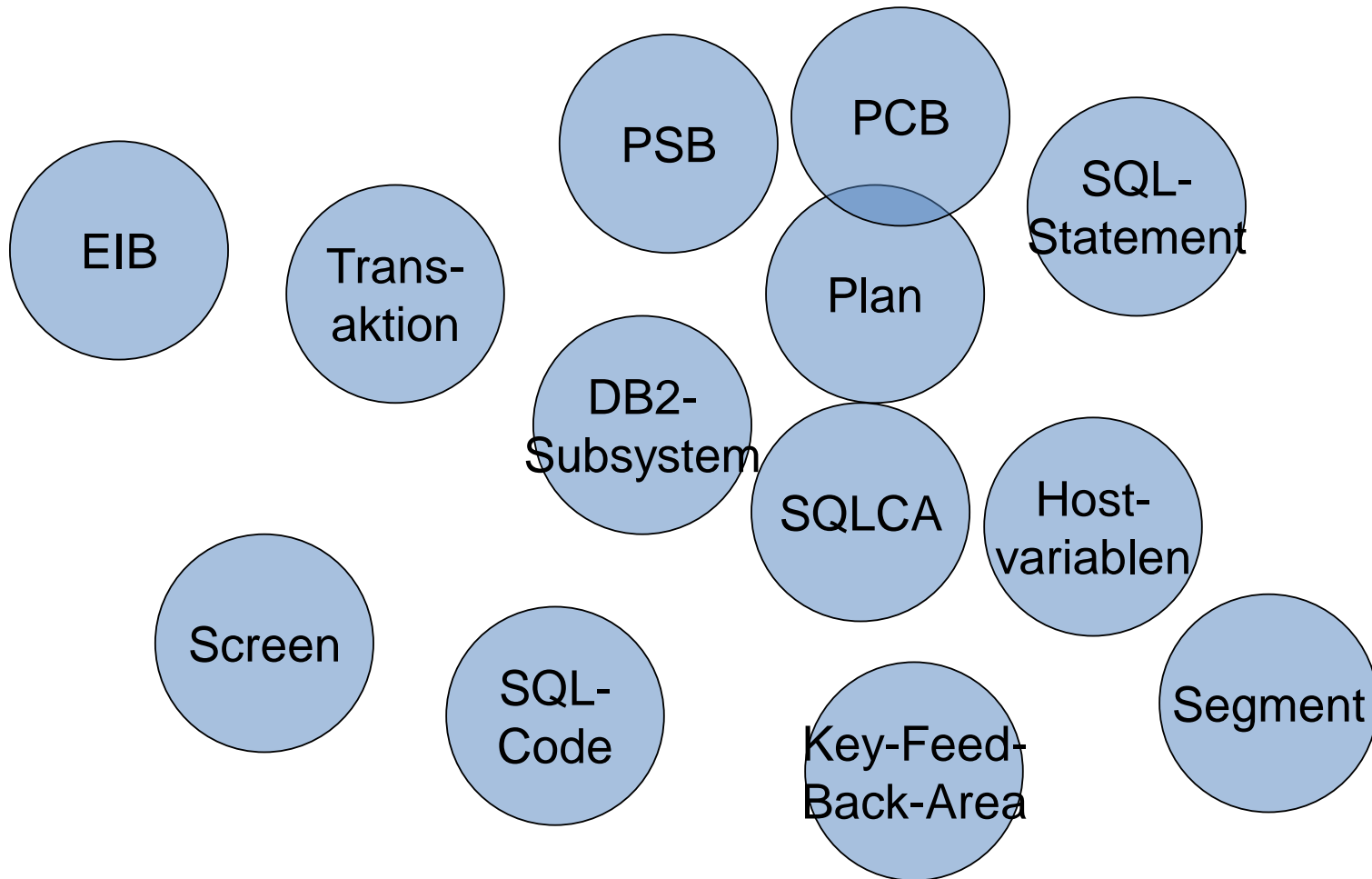
<H1> I B M F A U L T A N A L Y Z E R S Y N O P S I S

A system abend 0C7 occurred in module FO709 program FO709 at offset X'AE8'.

A program-interruption code 0007 (Data Exception) is associated with this abend

-
- Einführung und Überblick
 - Exkurs in die Theorie
 - Produktüberblick
 - Realtime Analysis
 - Online Interface
 - Interactive Reanalysis / Batch Reanalysis
 -  • CICS / DB2 / IMS
 - Compileliste bereitstellen
 - Optionen und weitere Tipps
 - Zusammenfassung – Diskussion – Austausch

Begriffe



Allgemein

- Es gibt keine besonderen Aktivitäten, die erforderlich wären, um die Informationen zu erhalten.
- In der „üblichen“ Analyse werden diese Informationen angezeigt.
- Sind Informationen zu einem Subsystem vorhanden, gibt es die entsprechenden Menüpunkte bzw. sind sie „geöffnet“.

CICS – Einstieg

```
File View Services Help
-----
Interactive Reanalysis Report                               Line 1 Col 1 80
Command ==> _____ Scroll ==> CSR
TRANID: CDAT          CICS ABEND: 4038          DEMOMVS    2006/12/19  13:41:11

Fault Summary:
Module CDAT2, program CDAT2, source line # 124 : CICS abend 4038 .

Select one of the following options to access further fault information:
 1. Synopsis
 2. Event Summary
 3. CICS Information
 4. Storage Areas
 5. Messages
 6. Language Environment Heap Analysis
 7. Abend Job Information
 8. Fault Analyzer Options

{Fault Analyzer maximum storage allocated: 2.73 megabytes.
DeferredReport processing execution time was 4.19 seconds (0.33 seconds CPU)}

*** Bottom of data.
```



Select CICS Information

CICS – Kontrollblöcke

```
File View Services Help
-----
CICS Information                                     Line 1 Col 1 80
Command ==>                                         Scroll ==> CSR
TRANID: CDAT          CICS ABEND: 4038              DEMOMVS    2006/12/19  13:41:11

CICS Release. . . . . : 0640
Application ID. . . . . : CICSACB5
CICS Transaction ID . . . . . : CDAT
CICS Task Number. . . . . : 00345
CICS Terminal ID. . . . . : 0024
CICS Terminal Netname . . . . : TCP00024

Select one of the following:
1. CICS Control Blocks
2. CICS Transaction Storage
3. Last CICS 3270 Screen Buffer
4. Last CICS 3270 Screen Buffer Hex
5. Summarized CICS Trace
6. CICS Trace Formatting
7. CICS Recovery Manager
8. CICS Levels, Commareas, and Channels

*** Bottom of data.
```



Select CICS Control Blocks

CICS – Kontrollblöcke – EIB

Select one of the following options:

1. CICS Control Blocks
2. CICS Transaction
3. Last CICS 3270
4. Last CICS 3270
5. Summarized CICS
6. CICS Trace Form
7. CICS Recovery
8. CICS Recovery

Enter →

Control Blocks:

- EIB
- Commarea
- CSA
- TCA
- EIS
- TCTTE
- and others...

```
File View Services Help
CICS Control Blocks                               Line 1 Col 1 80
Command ==>                                     Scroll ==> CSR
TRANID: CDAT          CICS ABEND: 4038          DEMOMVS    2006/12/19  13:41:11

User EXEC Interface Block (EIB) at Address 001400D0 :
Task Start Time . . . . . 13:41:11              (EIBTIME - HH:MM:SS)
Task Start Date . . . . . 2006/12/19           (EIBDATE - YYYY/MM/DD)
Transaction ID. . . . . CDAT                   (EIBTRNID)
Task Number . . . . . 345                      (EIBTASKN)
Terminal ID . . . . . 0024                     (EIBTRMID)
Cursor Position . . . . . 02E2                 (EIBCPOSN)
Communication Area Length : 50                 (EIBCALEN)
Attention ID. . . . . ENTER                     (EIBAID)
Last CICS Command . . . . . LINK               (EIBFN)
RESP Condition. . . . . NORMAL                 (EIBRESP)
RESP Condition Reason . . . . . 00000000       (EIBRESP2)
Data Set ID . . . . . n/a                      (EIBDS)
Request ID. . . . . n/a                        (EIBREQID)
Program Name. . . . . CDAT2                    (EIBSRCE)
Syncpoint Required. . . . . No                 (EIBSYNC)
Facility Free Required. . . . . No             (EIBFREE)
Continue Receiving Data . . . . . No           (EIBRECV)
```

PF8

User EXEC Interface Block

CICS – Kontrollblöcke – CA

Select one of the following:

1. CICS Control Blocks
2. CICS Transactions
3. Last CICS 3270
4. Last CICS 3270
5. Summarized CICS
6. CICS Trace Form
7. CICS Recovery
8. CICS Levels, C

Control Blocks:

- EIB
- Commarea
- CSA
- TCA
- EIS
- TCTTE
- and others...

```

File View Services Help
CICS Control Blocks                               Line 20 Col 1 80
Command ==>                                     Scroll ==> CSR
TRANID: CDAT      CICS ABEND: 4038              DEMOMVS    2006/12/19  13:41:11
Attach Header Data in RU. :                      CICS

Control Blocks
RU Indicates End-of-Chain : No                   (EIBEOC)
User Data Contains FMH. . : No                   (EIBFMH)
Data is Complete. . . . . : No                   (EIBCOMPL)
Signal Received . . . . . : No                   (EIBSIG)
CONFIRM Request Received. : No                   (EIBCONF)
Error Code Received . . . : No                   (EIBERRCD)
SYNCPPOINT ROLLBACK Req'd. : No                 (EIBSYNRB)
No Data Sent. . . . . : No                      (EIBNODAT)
Rollback. . . . . : No                          (EIBRLDBK)

Communication Area (COMMAREA) at Address 21519DB0 :
Address  Offset  Hex                                     EBCDIC
21519DB0                F1F5F9F0 F0F3F0F3 40404040 40404040 *15900303      *
21519DC0             +10  40404040 40404040 4040F0F0 F0F04E21 *           0000+.*
21519DD0             +20  00003EB5 00011F41 02000006 21050000 *.....*
21519DE0             +30  0000                                     *..*
    
```

CICS Communication Area

CICS – Transaction Storage

Select one of the

- 1. CICS Control
- 2. CICS Transac**
- 3. Last CICS 32
- 4. Last CICS 32
- 5. Summarized C
- 6. CICS Trace F
- 7. CICS Recover
- 8. CICS Levels,


File View Services Help

CICS Transaction Storage Line 1 Col 1 80
Command ==> Scroll ==> CSR

TRANID: CDAT CICS ABEND: 4038 DEMOMVS 2006/12/19 13:41:11

Transaction Storage (USER24) at Address 00141680 :

Address	Offset	Hex	EBCDIC
00141680		C2F0F0F0 F0F3F4F5 00000000 00000000	*B0000345.....*
00141690	+10	00000000 00000000 00000000 00000000	*.....*
Lines 001416A0-001417C0 same as above			
001417D0	+150	0000001D F8C1C4E3 D6D6D3E2 40C2C9D9	*...8ADTOOLS BIR*
001417E0	+160	E3C8C4C1 E861D9C5 E3C9D9C5 D4C5D5E3	*THDAY/RETIREMENT*
001417F0	+170	40E2C1D4 D7D3C540 C1D7D7D3 C9C3C1E3	* SAMPLE APPLICAT*
00141800	+180	C9D6D500 00000000 00000000 00000000	*ION.....*
00141810	+190	00000000 00000000 00000000 00000000	*.....*
Lines 00141820-001418B0 same as above			
001418C0	+240	00000000 0000001D C1F1F5F9 F0F0F3F0	*.....A1590030*
001418D0	+250	F31DF000 1DF04C7E 7E40D7D3 C5C1E2C5	*3.0..0<== PLEASE*
001418E0	+260	40C5D5E3 C5D940C2 C9D9E3C8 C4C1E3C5	* ENTER BIRTHDATE*
001418F0	+270	40C9D540 E8E8E8E8 D4D4C4C4 40C6D6D9	* IN YYYYMMDD FOR*
00141900	+280	D4C1E340 40404040 00000000 00000000	*MAT*
00141910	+290	00000000 00000000 00000000 00000000	*.....*
Lines 00141920-00141950 same as above			

Enter 

Transaction Storage

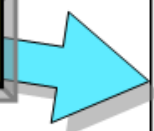
Select CICS Transaction Storage

CICS – letzter Screen

Select one of the foll

- 1. CICS Control Bloc
- 2. CICS Transaction
- 3. Last CICS 3270 Sc**
- 4. Last CICS 3270 Sc
- 5. Summarized CICS T
- 6. CICS Trace Format
- 7. CICS Recovery Man
- 8. CICS Levels, Comm

Enter



```
File View Services Help
Last CICS 3270 Screen Buffer                               Line 1 Col 1 80
Command ==> |                                           Scroll ==> CSR
TRANID: CDAT          CICS ABEND: 4038          DEMOMVS    2006/12/19  13:41:11

      Column
Row  ----+----1----+----2----+----3----+----4----+----5----+----6----+----7----
 1  .....
 2  .....
 3  .....
 4  .....
 5  .....ADTOOLS BIRTHDAY/RETIREMENT SAMPLE APPLICATION.....
 6  .....
 7  .....
 8  .....15900303...<== PLEASE ENTER BIRTHDATE IN YYYYMMDD FORMAT
 9  .....
10  .....B...<== ENTER REQUEST .....
11  .....B : SEE YOUR BIRTHDAY ..... (LINK TO PROGRAM CD
12  .....R : CALCULATE RETIREMENT ..... (CALL PROGRAM CD
13  .....C : CLEAR AND START OVER .....
14  .....@ : ABEND WITH SOC7 .....
15  .....
16  .....
```

Last CICS
3270 Screen
Buffer


Select Last CICS 3270 Screen Buffer

CICS – CICS Trace

Select one of the following

1. CICS Control Block
2. CICS Transaction S
3. Last CICS 3270 Scr
4. Last CICS 3270 Scr
- 5. Summarized CICS Tr**
6. CICS Trace Formatt
7. CICS Recovery Mana
8. CICS Levels, Comma

Enter



```
File View Services Help
-----
Summarized CICS Trace                               Line 1 Col 1 80
Command ==> |                                     Scroll ==> CSR
TRANID: CDAT          CICS ABEND: 4038          DEMOMVS    2006/12/19  13:41:11

00345 QR   AP F600 TDA  ENTRY WRITE_TRANSIENT_DATA CESE,212BCE60 , 00000001
00345 QR   AP 00E1 EIP  EXIT  WRITEQ-TD                OK

00345 QR   AP 00E1 EIP  ENTRY WRITEQ-TD
Called-from-address 00547B22 : Module CEECCICS + X'726A'
00345 QR   AP F600 TDA  ENTRY WRITE_TRANSIENT_DATA CESE,212BCE60 , 00000001
00345 QR   AP 00E1 EIP  EXIT  WRITEQ-TD                OK

00345 QR   AP 00E1 EIP  ENTRY WRITEQ-TD
Called-from-address 00547B22 : Module CEECCICS + X'726A'
00345 QR   AP F600 TDA  ENTRY WRITE_TRANSIENT_DATA CESE,212BCE60 , 00000001
00345 QR   AP 00E1 EIP  EXIT  WRITEQ-TD                OK

00345 QR   AP 00E1 EIP  ENTRY WRITEQ-TD
Called-from-address 00547B22 : Module CEECCICS + X'726A'
00345 QR   AP F600 TDA  ENTRY WRITE_TRANSIENT_DATA CESE,212BCE60 , 00000001
00345 QR   AP 00E1 EIP  EXIT  WRITEQ-TD                OK
```

CICS Trace
Table

Select Summarized CICS Trace

CICS – Erklärung CICS Abend – 1

```
File View Services Help
-----
Interactive Reanalysis Report                               Line 1 Col 1 80
Command ==> _____ Scroll ==> CSR
TRANID: CDAT          CICS ABEND: 4038          DEMOMVS    2006/12/19  13:41:11

Fault Summary:
Module CDAT2, program CDAT2, source line # 124 : CICS abend 4038 .

Select one of the following options to access further fault information:
1. Synopsis
2. Event Summary
3. CICS Information
4. Storage Areas
5. Messages
6. Language Environment Heap Analysis
7. Abend Job Information
8. Fault Analyzer Options

{Fault Analyzer maximum storage allocated: 2.77 megabytes.
DeferredReport processing execution time was 4.19 seconds (0.33 seconds CPU)}

*** Bottom of data.
```



get the CICS Abend Code description ... first go to Synopsis

CICS – Erklärung CICS Abend – 2

```
File View Services Help
-----
Synopsis                                     Line 1 Col 1 80
Command ==> █                               Scroll ==> CSR
TRANID: CDAT          CICS ABEND: 4038          DEMOMVS    2006/12/19  13:41:11

A CICS abend 4038 occurred in module CEEPLPKA at offset X'C0480'.

The cause of the failure was program CDAT2 in module CDAT2.  The COBOL source
code that immediately preceded the failure was:

Source
Line #
000124          COMPUTE W-INPUT-DATE-INT = ,
000125          FUNCTION INTEGER-OF-DATE(W-INPUT-DATE)

The COBOL source code for data fields involved in the failure:

Source
Line #
000018          01 W-INPUT-DATE          PIC 9(8) .

Data field values at time of abend:
```



select the abend code

CICS – Erklärung CICS Abend – 3

```
File View Services Help
-----
CICS Abend Code 4038 Explanation                               Line 1 Col 1 80
Command ==> █ Scroll ==> CSR
TRANID: CDAT          CICS ABEND: 4038          DEMOMVS    2006/12/19  13:41:11

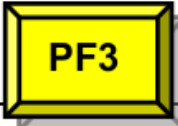
U4038 (X'FC6')

Explanation:  The enclave ended with an unhandled Language Environment
software-raised or user-raised condition of severity 2 or greater, and the
run-time option ABTERMENC(ABEND) was specified.

Programmer Response:  Check the Language Environment message file for
message output.

System Action:  Enclave terminated.

*** Bottom of data.
```



abend code description

CICS – Erklärung CICS Abend – 4

```
File View Services Help
-----
Synopsis                                     Line 1 Col 1 80
Command ==> █                               Scroll ==> CSR
TRANID: CDAT          CICS ABEND: 4038          DEMOMVS    2006/12/19  13:41:11

A CICS abend 4038 occurred in module CEEPLPKA at offset X'C0480'.

The cause of the failure was program CDAT2 in module CDAT2.  The COBOL source
code that immediately preceded the failure was:

Source
Line #
000124          COMPUTE W-INPUT-DATE-INT = ,
000125          FUNCTION INTEGER-OF-DATE(W-INPUT-DATE)

The COBOL source code for data fields involved in the failure:

Source
Line #
000018          01 W-INPUT-DATE          PIC 9(8).

Data field values at time of abend:
```



back to the Synopsis ... scroll forward

CICS – Erklärung CICS Abend – 5

```
File View Services Help
-----
Synopsis                                         Line 9 Col 1 80
Command ==>                                     Scroll ==> CSR
TRANID: CDAT          CICS ABEND: 4038          DEMOMVS    2006/12/19  13:41:11
000124              COMPUTE W-INPUT-DATE-INT = ,
000125              FUNCTION INTEGER-OF-DATE(W-INPUT-DATE)

The COBOL source code for data fields involved in the failure:

Source
Line #
000018              01 W-INPUT-DATE              PIC 9(8).

Data field values at time of abend:

W-INPUT-DATE = 15900303

Important messages:
IGZ0160S Argument-1 for function INTEGER-OF-DATE in program CDAT2 at line
124 was less than 16010101 or greater than 99991231.

*** Bottom of data.
```



select associated message

CICS – Erklärung CICS Abend – 6

```
File View Services Help
-----
Message IGZ0160S Explanation Line 1 Col 1 80
Command ==> Scroll ==> CSR
TRANID: CDAT CICS ABEND: 4038 DEMOMVS 2006/12/19 13:41:11

IGZ0160S Argument-1 for function INTEGER-OF-DATE in program CDAT2 at line 124
was less than 16010101 or greater than 99991231.

IGZ0160S Argument-1 for function function-name in program program-name at
line line-number was less than 16010101 or greater than 99991231.

Explanation: The input argument to function INTEGER-OF-DATE is less than
16010101 or greater than 99991231.

Programmer Response: Check that the function argument is in the valid
range.

System Action: The application was terminated.

Symbolic Feedback Code: IGZ050

*** Bottom of data.
```

message description

DB2 – Einstieg

```
File View Services Help
-----
Interactive Reanalysis Report                               Line 1 Col 1 80
Command ==>                                             Scroll ==> CSR
JOBNAME: IM07M419  SYSTEM ABEND: 0C7                    P007      2012/08/16  14:33:08

Fault Summary:
Module FO709, program FO709, source line # 1347 : Abend S0C7 (Data Exception).

Select one of the following options to access further fault information:
 1. Synopsis
 2. Event Summary
 3. DB2 Information
 4. IMS Information
 5. Open Files
 6. Storage Areas
 7. Messages
 8. Language Environment Heap Analysis
 9. Abend Job Information
10. Fault Analyzer Options

äFault Analyzer maximum storage allocated: 6.22 megabytes.ü

*** Bottom of data.
```

DB2 – Informationen zum DB2-Umfeld

```
File View Services Help
DB2 Information                               Line 3 Col 1 80
Command ==> CSR
JOBNAME: DNET074Y  SYSTEM ABEND: 0CA        DEMOMVS   2006/12/20  12:08:00
DB2 Subsystem DSNB

DB2 Version . . . . . : V7R1M0
Plan Name . . . . . : PHONEP01 (Bound 2006/12/20 12:07:57)
Plan Owner . . . . . : DNET424
Database Request Module Name: DNET074.DEMOS.DBRMLIB(PHONEP01)
Consistency Token . . . . . : X'17FC3AC107872A8E'
Primary Authorization ID. . . : DNET424
Current SQL ID. . . . . : DNET424

Last Executed SQL Statement:
List
Stmt #
000436      EXEC SQL UPDATE DSN8710.VEMPLP
000436      SET PHONENUMBER = :NEWNO /- CHANGE PHONE NO
000436      WHERE EMPLOYEENUMBER = :ENO

Fault Analyzer Event #. . . : 7 (Program PHONEP01)

Input Host Variables:
Name and Data Type. . . . : IOAREA.NEWNO CHARACTER(4)
At Address. . . . . : 1FD6424C
Data Value. . . . . : RAM

Name and Data Type. . . . : IOAREA.ENO CHARACTER(6)
At Address. . . . . : 1FD64246
Data Value. . . . . : E PROG
```

DB2 subsystem, plan, IDs

Last SQL statement

Host variables

PF8

page forward through DB2 information

DB2 – SQLCA

```
File View Services Help
DB2 Information
Command ==>
JOBNAME: DNET074Y SYSTEM ABEND: OCA DEMOMVS 2006/12/20 12:08:00
DB2 Control Blocks
SQL Communications Area (SQLCA) for Event # 7 Program PHONEP01 at Address
1FD640E0 :
Offset Field Value
Dec Hex Name Hex EBCDIC
0 (0) SQLCAID E2D8D3C3 C1404040 *SQLCA *
8 (8) SQLCABC 00000088 *. . . h *
12 (C) SQLCODE 00000084 *. . . . *
16 (10) SQLERRML 0000 *.. *
18 (12) SQLERRMC 40404040 40404040 40404040 40404040 * *
34 (22) 40404040 40404040 40404040 40404040 * *
50 (32) 40404040 40404040 40404040 40404040 * *
66 (42) 40404040 40404040 40404040 40404040 * *
82 (52) 40404040 4040 * *
88 (58) SQLERRP C4E2D5E7 D9C6C640 *DSNXRFF *
96 (60) SQLERRD FFFFFFF92 00000000 00000000 FFFFFFFF *. . . k. . . . . *
112 (70) 00000000 00000000 * . . . . . *
120 (78) SQLWARN 40404040 40404040 404040 * *
131 (83) SQLSTATE F0F2F0F0 F0 *02000 *
SQLSTATE 02000 Explanation
```

SQL Communications Area

SQLCODE 100 Explanation



Select SQLCode

DB2 – SQLCODE

```
File View Services Help
-----
SQLCODE 100 Explanation                               Line 1 Col 1 80
Command ==> █                                         Scroll ==> CSR
JOBNAME: DNET074Y  SYSTEM ABEND: 0CA                DEMOMVS    2006/12/20  12:08:00

+100    ROW NOT FOUND FOR FETCH, UPDATE OR DELETE, OR THE RESULT OF A QUERY
        IS AN EMPTY TABLE

Explanation:  One of the following conditions occurred:

*   No row met the search conditions specified in an UPDATE or DELETE
    statement.

*   The result of a SELECT INTO statement was an empty table.

*   The result of the subselect of an INSERT statement is empty.

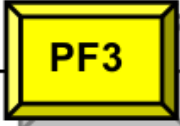
*   A FETCH statement was executed when the cursor was positioned after
    the last row of the result table.

When a SELECT statement is executed using SPUFI, this SQLCODE indicates
normal completion.

This SQLCODE is also issued when LOB data cannot be returned. This
situation can occur when an application is running with isolation level UR
and another application has locked the LOB table space.

System Action:  No data was retrieved, updated, or deleted.

SQLSTATE:  02000
```



SQLCode explanation

DB2 – SQLSTATE

```
File View Services Help
SQLSTATE 02000 Explanation                               Line 1 Col 1 80
Command ==> █                                         Scroll ==> CSR
JOBNAME: DNET074Y  SYSTEM ABEND: 0CA                   DEMOMVS   2006/12/20 12:08:00

One of the following exceptions occurred:

- The result of the SELECT INTO statement or the subselect of the INSERT
  statement was an empty table.
- The number of rows identified in the searched UPDATE or DELETE statement was
  zero.
- The position of the cursor referenced in the FETCH statement was after the
  last row of the result table.

*** Bottom of data.
```

SQLState explanation

IMS – Einstieg

```
File View Services Help
Interactive Reanalysis Report                               Line 1 Col 1 80
Command ==> _____ Scroll ==> CSR
JOBNAME: DNET424I  SYSTEM ABEND: 0CB                    DEMOMVS   2006/12/21  09:32:03

Fault Summary:
Module TRADERI, program TRADERI, source line # 590 : Abend S0CB
(Decimal-Divide Exception).

Select one of the following options to access further fault information:
 1. Synopsis
 2. Event Summary
 3. IMS Information
 4. Open Files
 5. Storage Areas
 6. Messages
 7. Language Environment Heap Analysis
 8. Abend Job Information
 9. Fault Analyzer Options

{Fault Analyzer maximum storage allocated: 1.82 megabytes.}

*** Bottom of data.
```



select IMS Information

IMS – Informationen zum IMS-Umfeld

```
File View Services Help
IMS Information                                     Line 1 Col 1 80
Command ==> █                                     Scroll ==> CSR
JOBNAME: DNET424I  SYSTEM ABEND: 0CB              DEMOMVS    2006/12/21  09:32:03

IMS Version . . . . . : V8R1M0
IMS Region Type . . . . . : DL/I Batch Region (DB)
IMS Subsystem Name . . . . . : n/a
Application Program Name . . . . . : TRADERI
PSB Name . . . . . : PTRDI

Last DL/I Call Parameter List

Note that storage addressed by individual parameters might no longer be valid.

Parameter 1 . . . . . : 0008DD38
  DL/I Call Function . . . . . : GU (Get Unique)
Parameter 2 . . . . . : 0009A180
  (See "IMS Control Blocks" for details of this PCB)
Parameter 3 . . . . . : 0008DED8
Parameter 4 . . . . . : 8008DE70
  SSA # 1 . . . . . : COMPANY *---(COMPKEY = Veck_Transport      )

IMS Control Blocks

Input/Output Program Communications Block (IOPCB) (** Current/Last Used **):
  At Address . . . . . : 0005B084
  PCB Name . . . . . : IOPCB
```

Connection information

DL/I call parameter list point & shoot addresses

PF8

select IMS information

IMS – IOPCB, DB-PCBs

```
File View Services Help
IMS Information Line 22 Col 1 80
Command ==> Scroll ==> CSR
JOBNAME: DNET424I SYSTEM ABEND: 0CB DEMOMVS 2006/12/21 09:32:03

IMS Control Blocks

Input/Output Program Communications Block (IOPCB) (** Current/Last Used **):
At Address. . . . . : 0005B084
PCB Name. . . . . : IOPCB
Relative PCB Number . . . : 1
PCB Type. . . . . : I/O
Logical Terminal ID . . . : n/a
Status Code . . . . . : ' ' (Normal status)
User ID . . . . . : n/a
Group Name. . . . . : n/a
Formatting Module Name. . : n/a

Data Base Program Communications Block (DBPCB):
At Address. . . . . : 0009A4D0
PCB Name. . . . . : DBPCB01
Relative PCB Number . . . : 2
PCB Type. . . . . : Data Base or Online
Data Base Name. . . . . : DR1E
Segment Level . . . . . : n/a
Status Code . . . . . : ' ' (Normal status)
Processing Options. . . . : A
Segment Name. . . . . : HIDAM
Number of Segments. . . . : 2
Key Feedback Length . . . : 0
```

IO PCB information

Database PCB

PF8

page forward through IMS information

IMS – KFB, IMS-Trace

```
File View Services Help
IMS Information Line 51 Col 1 80
Command ==> Scroll ==> CSR
JOBNAME: DNET424I SYSTEM ABEND: 0CB DEMOMVS 2006/12/21 09:32:03
Data Base Program Communications Block (DBPCB) (** Current/Last Used **):
  At Address. . . . . : 0009A180
  PCB Name. . . . . : DBPCB02
  Relative PCB Number . . . . : 3
  PCB Type. . . . . : Data Base or Online
  Data Base Name. . . . . : DR2E
  Segment Level . . . . . : 01
  Status Code . . . . . : ' ' (Normal status)
  Processing Options. . . . . : G
  Segment Name. . . . . : COMPANY
  Number of Segments. . . . . : 1
  Key Feedback Length . . . . . : 20

Key Feedback Data:
  Address  Offset  Hex  EBCDIC
  0009A1DC          E5858392 6DE39981 95A29796 99A34040 *Veck_Transport *
  0009A1EC      +10  40404040          *          *
```

Second database PCB

Key feedback area

Call trace

#	Call	Description	Status	Description
1	01	GHU or GU	' '	Status good.
2	01	GHU or GU	' '	Status good.
3	01	GHU or GU	' '	Status good.
4	01	GHU or GU	' '	Status good.
5	01	GHU or GU	' '	Status good.
6	01	GHU or GU	' '	Status good.

PF8

page forward through IMS information

IMS – DLICALL-Statistik

```
File View Services Help
IMS Information Line 78 Col 1 80
Command ==> Scroll ==> CSR
JOBNAME: DNET424I SYST 3 MEMOMVS 2006/12/21 09:32:03

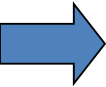
Call counts PF8 Last page -Call Counts

IMS Accounting Information

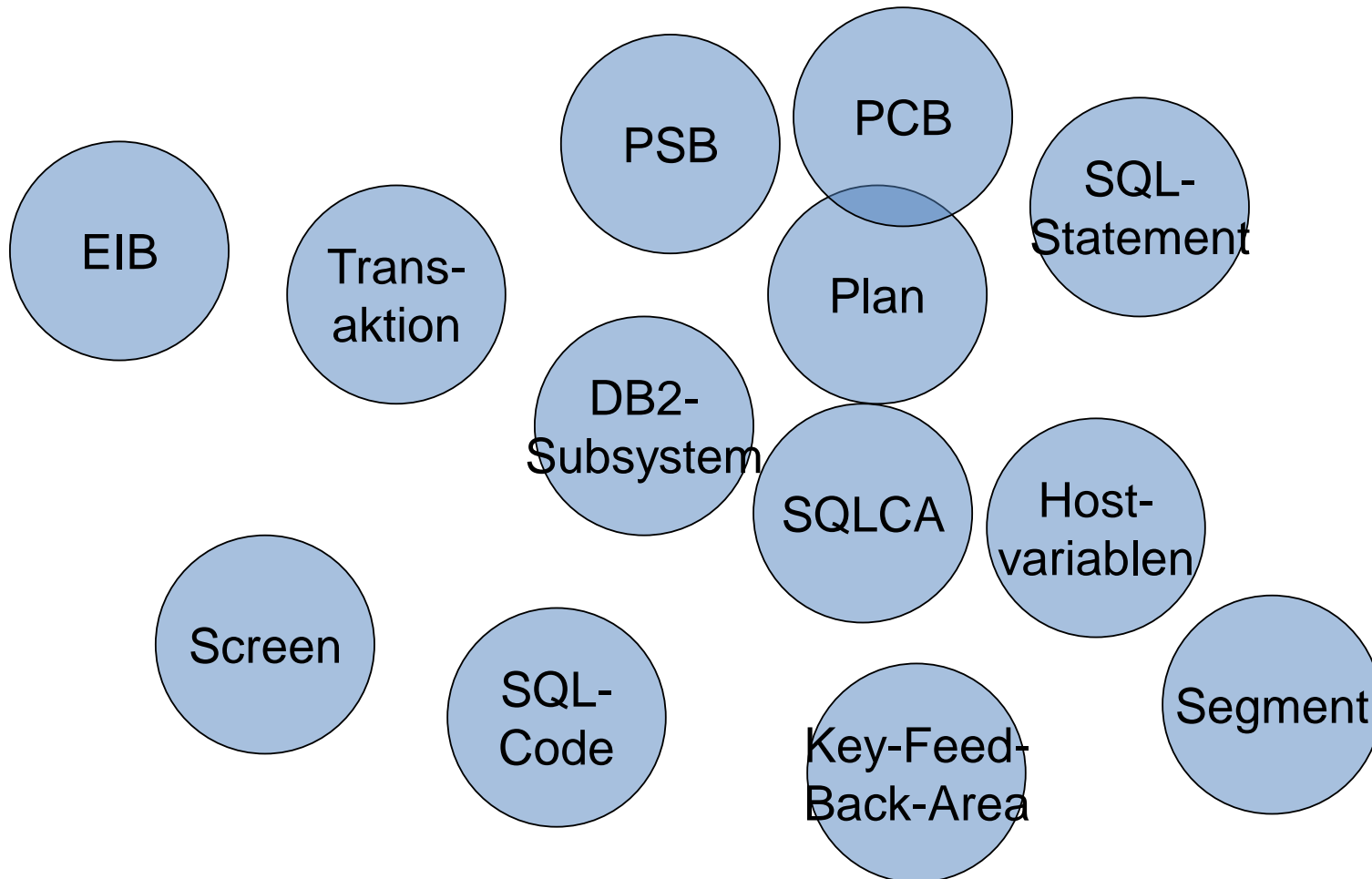
DL/I Data Base Calls:
GU Calls. . . . . : 7
GN Calls. . . . . : 0
GNP Calls . . . . . : 0
GHU Calls . . . . . : 0
GHN Calls . . . . . : 0
GHNP Calls. . . . . : 0
ISRT Calls. . . . . : 0
DLET Calls. . . . . : 0
REPL Calls. . . . . : 0
Total Calls . . . . . : 7
DL/I Message Calls:
GU Calls. . . . . : 0
GN Calls. . . . . : 0
ISRT Calls. . . . . : 0
PURG Calls. . . . . : 0
CMD Calls . . . . . : 0
GCMD Calls. . . . . : 0
CHNG Calls. . . . . : 0
AUTH Calls. . . . . : 0
SETO Calls. . . . . : 0
DL/I System Service Calls:
APSB Calls. . . . . : 0

PURG Calls. . . . . : 0
CMD Calls . . . . . : 0
GCMD Calls. . . . . : 0
CHNG Calls. . . . . : 0
AUTH Calls. . . . . : 0
SETO Calls. . . . . : 0
DL/I System Service Calls:
APSB Calls. . . . . : 0
DPSB Calls. . . . . : 0
GMSG Calls. . . . . : 0
ICMD Calls. . . . . : 0
RCMD Calls. . . . . : 0
CHKP Calls. . . . . : 0
XRST Calls. . . . . : 0
ROLB Calls. . . . . : 0
ROLS Calls. . . . . : 0
SETS Calls. . . . . : 0
SETU Calls. . . . . : 0
INIT Calls. . . . . : 1
INQY Calls. . . . . : 0
LOG Calls . . . . . : 0

IMS Parameter Modules
Module DFSPRPX0 Address . . : 000078B0
```

-
- Einführung und Überblick
 - Exkurs in die Theorie
 - Produktüberblick
 - Realtime Analysis
 - Online Interface
 - Interactive Reanalysis / Batch Reanalysis
 - CICS / DB2 / IMS
 -  • Compileliste bereitstellen
 - Optionen und weitere Tipps
 - Zusammenfassung – Diskussion – Austausch

Begriffe



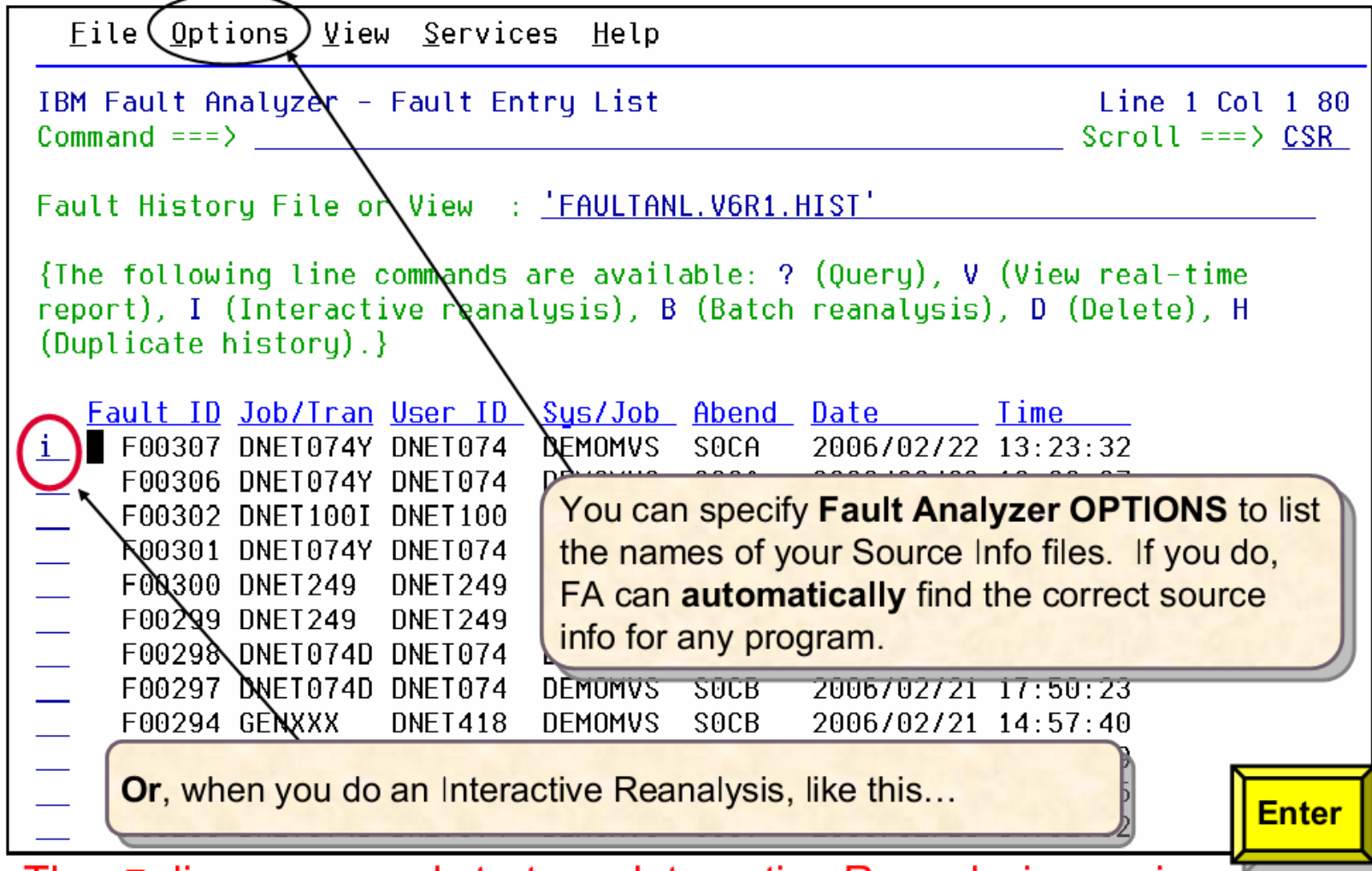
Compileliste bereitstellen

Wer kann was?

Compiler	Sysdebug File	Compiler Listing	Langx File	Sysadata File
LE COBOL (incl. Enterprise COBOL)	✓	✓	✓	
VS COBOL II		✓	✓	
OS/VS COBOL		✓	✓	
Enterprise PLI	✓	✓	✓	
PL/I for MVS and VM		✓	✓	
OS PLI		✓	✓	
C and C++		✓	✓	
Assembler			✓	✓

Compileliste bereitstellen

Einstieg



File **Options** View Services Help

IBM Fault Analyzer - Fault Entry List Line 1 Col 1 80
Command ==> Scroll ==> CSR

Fault History File or View : 'FAULTANL.V6R1.HIST'

{The following line commands are available: ? (Query), V (View real-time report), I (Interactive reanalysis), B (Batch reanalysis), D (Delete), H (Duplicate history).}

<u>i</u>	<u>Fault ID</u>	<u>Job/Tran</u>	<u>User ID</u>	<u>Sys/Job</u>	<u>Abend</u>	<u>Date</u>	<u>Time</u>
	F00307	DNET074Y	DNET074	DEMOMVS	S0CA	2006/02/22	13:23:32
	F00306	DNET074Y	DNET074	DEMOMVS	S0CA	2006/02/22	13:23:32
	F00302	DNET100I	DNET100	DEMOMVS	S0CA	2006/02/22	13:23:32
	F00301	DNET074Y	DNET074	DEMOMVS	S0CA	2006/02/22	13:23:32
	F00300	DNET249	DNET249	DEMOMVS	S0CA	2006/02/22	13:23:32
	F00299	DNET249	DNET249	DEMOMVS	S0CA	2006/02/22	13:23:32
	F00298	DNET074D	DNET074	DEMOMVS	S0CB	2006/02/21	17:50:23
	F00297	DNET074D	DNET074	DEMOMVS	S0CB	2006/02/21	17:50:23
	F00294	GENXXX	DNET418	DEMOMVS	S0CB	2006/02/21	14:57:40

You can specify **Fault Analyzer OPTIONS** to list the names of your Source Info files. If you do, FA can **automatically** find the correct source info for any program.

Or, when you do an Interactive Reanalysis, like this...

Enter

The **I** line command starts an Interactive Reanalysis session...

Compileliste bereitstellen

Prompt, falls kein Listing vorhanden

```
File Options View Services Help
- Compiler Listing Not Found -
Command ==> █

Compiler listing or side file not found for:
Program Name . . . : PHONEP01
Language . . . . . : PL/I
Compile Date . . . : 2006/02/22 (YYYY/MM/DD)
Compile Time . . . : n/a      (HH:MM:SS)

Select one of the following options and press Enter:
2. 1. Continue without compiler listing or side file for this program
   2. Specify compiler listing or side file to use for this program
   3. Retry search for compiler listing or side file for this program
   4. Do not prompt again for any missing listing or side file
   5. Only prompt for the point of failure program listing or side file
This is the point of failure program.

... if FA does not automatically find the correct
source info file, this panel is displayed ...

F00293 DNET418 DNET418 DEMOMVS S0CB 2006/02/21 14:07:25
F00290 DNET074D DNET074 DEMOMVS S0CB 2006/02/21 14:07:25
F00289 DNET074D DNET074 DEMOMVS S0C7 2006/02/21 14:02:52
F00288 DNET418 DNET418 DEMOMVS S0CB 2006/02/21 08:47:25
```

Enter

Prompt for Source Information

Sidefile / Compileliste angeben

```
File Options View Services Help
Compiler Listing Not Found
Command ==>
Specify Compiler Listing or Side File
Command ==>
Specify the data set and member name containing the compiler listing or
side file and press Enter.
Data Set Name . . . 'dnet074.demos.pli.listing'
Member . . . . . PHONEP01
... missing listing or side file
... failure program listing or side file
Th
... and you can specify the location
of a source info file. It may be:
- a sysdebug file, or
- a compiler listing, or
- a langx file, or
- a sysadata file
F00293 DNET418
F00290 DNET074D
F00289 DNET074D
F00288 DNET418 DNET418 DEMOMVS SUCB 2006/02/21 08:47:25
```

If you do not already have a source info file, you can create a compiler listing now before you continue.

Prompt for Source Information

Compileliste bereitstellen

Compileliste nachträglich angeben (Einschränkungen!!) – Compile

```
Display Filter View Print Options Help
-----
SDSF HELD OUTPUT DISPLAY ALL CLASSES LINES 41,977 LINE 33-39 (39)
COMMAND INPUT ==>
NP JOBNAME JobID Owner Prty C ODisp Dest Tot-Rec Tot-CSR
DNET074D JOB07341 DNET074 144 H HOLD LOCAL 1,232
DNET074D JOB07341 DNET074 144 H HOLD LOCAL 268
DNET074X JOB07342 DNET074 144 H HOLD LOCAL 700
DNET074X JOB07342 DNET074 144 H HOLD LOCAL 1,232
DNET074X JOB07342 DNET074 144 H HOLD LOCAL 270
DNET074F JOB08025 DNET074 144 H HOLD LOCAL 1,335
DNET074C JOB08167 DNET074 128 H HOLD LOCAL 2,918
```

?

It is best to update your compile processes to automatically store a Source Info file in a PDS. If you have a Compiler Listing in another format, you must copy it to a PDS for Fault Analyzer.

If your Compiler Listing is in **SYSOUT**, here is an easy way to copy it to a PDS using **SDSF**.

Enter

The ? line command shows SYSOUT datasets for a job

Compileliste bereitstellen

Compileliste nachträglich angeben – File erstellen – 1

```
Display Filter View Print Options Help
-----
SDSF JOB DATA SET DISPLAY - JOB DNET074C (JOB08167) LINE 1-5 (5)
COMMAND INPUT ==> SCROLL ==> CSR
NP DDNAME StepName ProcStep DSID Owner C Dest Rec-Cnt Page
JESMSG LG JES2 2 DNET074 H LOCAL 22
JESJCL JES2 3 DNET074 H LOCAL 35
JESYSMSG JES2 4 DNET074 H LOCAL 83
xdc SYSPRINT COBCOMP 101 DNET074 H LOCAL 2,590
SYSPRINT LKED 103 DNET074 H LOCAL 188
```

Compiler Listing.

In SDSF, use the **XDC** line command to copy your Compiler Listing.

Enter

The XDC command copies SYSOUT to a data set

Compileliste nachträglich angeben – File erstellen – 2

```
SDSF Open Print Data Set
COMMAND INPUT ==> █
                                SCROLL ==> CSR

Data set name ==> 'DNET074.ADLAB.LISTING'
Member to use ==> SAM1
Disposition  ==> SHR          (OLD, NEW, SHR, MOD)

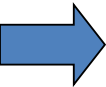
If the data set is to be created, specify the following.
Volume serial will be used to locate existing data sets if specified.

Management class ==> (Blank for default management class)
Storage class    ==>
  Volume serial  ==>
  Device type    ==>
Data class       ==>
  Space units    ==> BLKS
  Primary quantity ==> 500
  Secondary quantity ==> 500
  Directory blocks ==>
  Record format  ==> VBA
  Record length  ==> 240
  Block size     ==> 3120
```

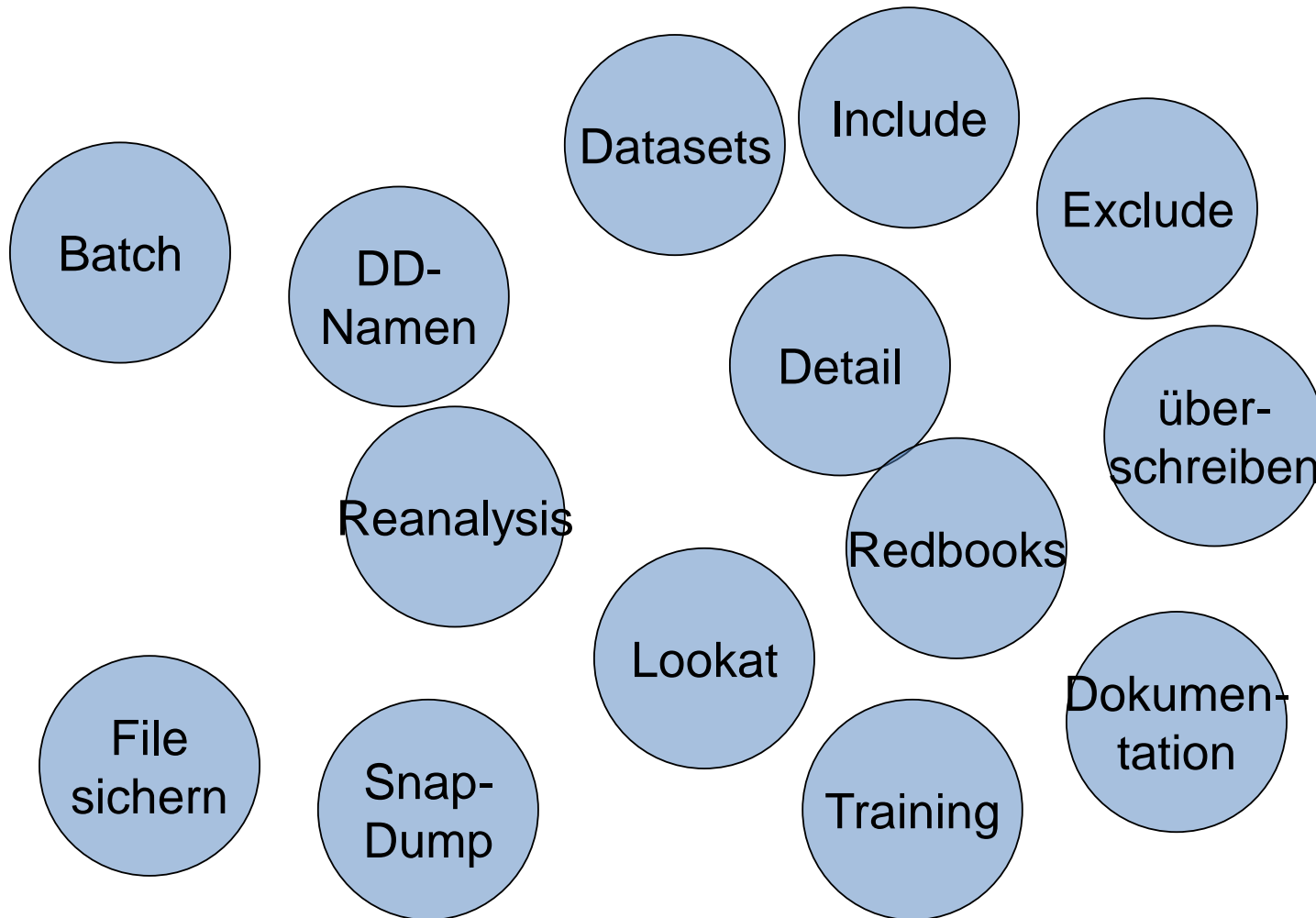
In SDSF, the **XDC** line command prompts you for a file name. Specify the name of a PDS with the correct attributes for the compiler that you used.

Fault Analyzer can use the listing that you copied to a PDS member.

The XDC command copies SYSOUT to a data set

-
- Einführung und Überblick
 - Exkurs in die Theorie
 - Produktüberblick
 - Realtime Analysis
 - Online Interface
 - Interactive Reanalysis / Batch Reanalysis
 - CICS / DB2 / IMS
 - Compileliste bereitstellen
 -  • Optionen und weitere Tipps
 - Zusammenfassung – Diskussion – Austausch

Begriffe



Allgemein

- Systemweite Definition in Parmlib (IDICNF00)
- überschreiben in Batchjobs möglich
- überschreiben bei Analyse möglich
- speichern der eigenen Auswahl (automatisch)

DATASETS

- Es werden temporär zu verschiedenen „DD-Namen“ Dateien allokiert.
- Meist bei Compilelisten benutzt.

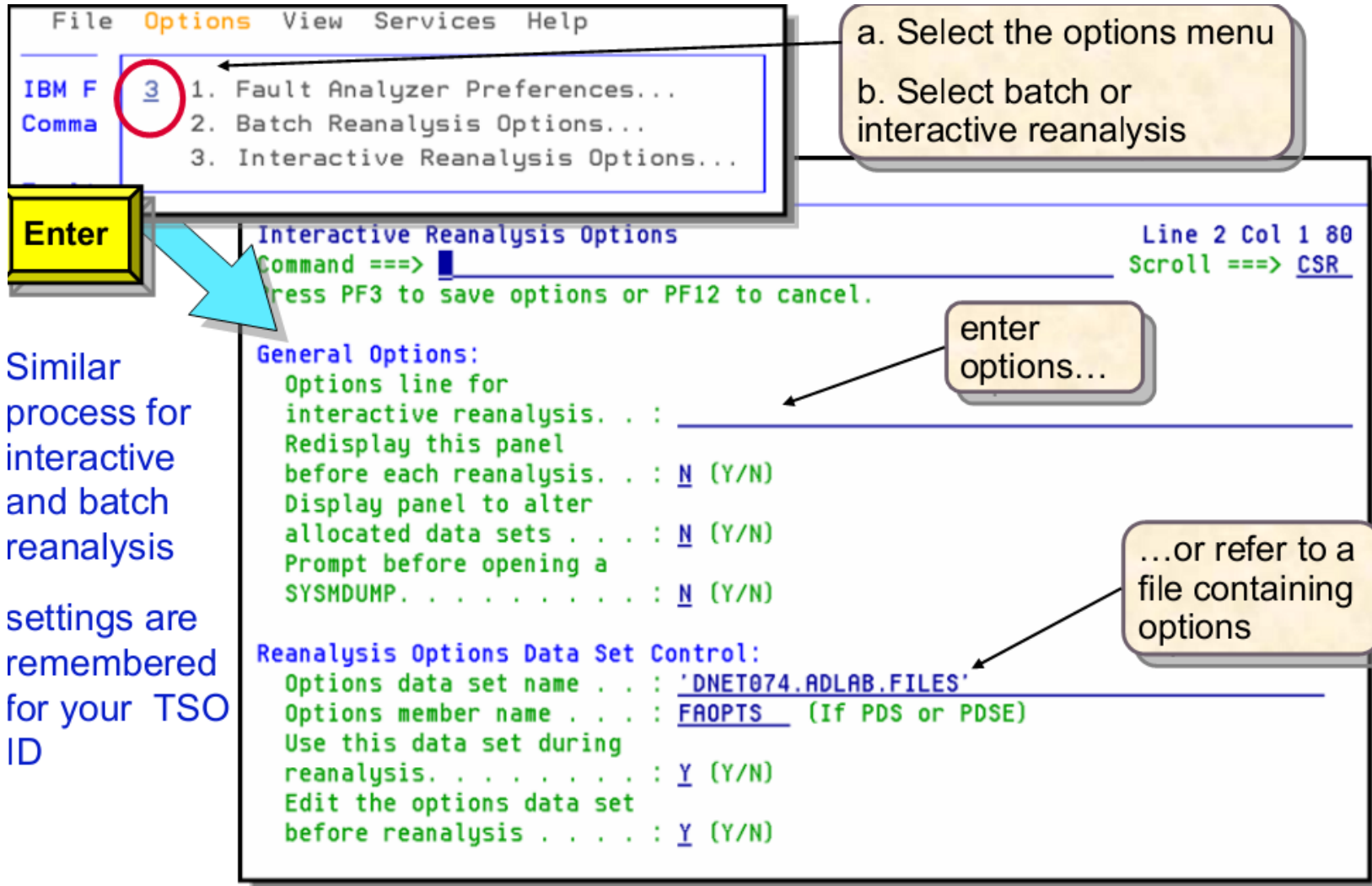
```
SPF/E EDIT DNET074.ADLAB.FILES(FAOPTS2) - 01.00           Columns 00001 00072
Command ==>                                Scroll ==> CSR
***** ***** Top of Data *****
000001  DATASETS (
000002     IDIHIST ( MY.FAULT.HISTORY.FILE )
000003     IDISYSDB( TEST.SYSDEBUG,           PROD.SYSDEBUG           )
000004     IDILANGX( TEST.IDILANGX,          PROD.IDILANGX           )
000005     IDILCOB ( TEST.COBOB.LISTINGS,    PROD.COBOB.LISTINGS    )
000006     IDILCOBO( TEST.OSVS.COBOB.LISTINGS,  PROD.OSVS.COBOB.LISTINGS  )
000007     IDILC   ( TEST.C.LISTINGS,         PROD.C.LISTINGS         )
000008     IDILPLI ( TEST.PLI.LISTINGS,       PROD.PLI.LISTINGS       )
000009     IDILPLIE( TEST.ENTRPRSE.PLI.LISTINGS,  PROD.ENTRPRSE.PLI.LISTINGS  )
000010     )
***** ***** Bottom of Data *****
```

Interessante Optionen

- **RETAINDUMP**
 - SYSABEND, SYSMDUMP, SYSUDUMP
- **INCLUDE**
 - Analyse bei Abend soll angestoßen werden
- **EXCLUDE**
 - keine Analyse bei Abend
- **DETAIL (SHORT, MEDIUM, LONG)**
 - Detaillierungsgrad des Reports
- **NODUP**
 - Duplikate werden unterdrückt

Optionen und weitere Tipps

Überschreiben – Online



The screenshot shows the 'Options' menu with three items: '1. Fault Analyzer Preferences...', '2. Batch Reanalysis Options...', and '3. Interactive Reanalysis Options...'. The number '3' is circled in red. An arrow points from a callout box to this menu. Below the menu, a yellow 'Enter' button is shown with an arrow pointing to the 'Interactive Reanalysis Options' screen. The screen displays 'Interactive Reanalysis Options' with a command line 'Command ==>' and a prompt 'Press PF3 to save options or PF12 to cancel.'. Below this, there are two sections: 'General Options:' and 'Reanalysis Options Data Set Control:'. The 'General Options:' section includes 'Options line for interactive reanalysis. . . : _____', 'Redisplay this panel before each reanalysis. . . : N (Y/N)', 'Display panel to alter allocated data sets . . . : N (Y/N)', and 'Prompt before opening a SYSMDUMP. : N (Y/N)'. The 'Reanalysis Options Data Set Control:' section includes 'Options data set name . . : 'DNET074.ADLAB.FILES'', 'Options member name . . . : FAOPTS (If PDS or PDSE)', 'Use this data set during reanalysis. : Y (Y/N)', and 'Edit the options data set before reanalysis : Y (Y/N)'. Callout boxes provide instructions: 'a. Select the options menu', 'b. Select batch or interactive reanalysis', 'enter options...', and '...or refer to a file containing options'. A yellow 'Enter' button is also shown with an arrow pointing to the 'Interactive Reanalysis Options' screen.

File Options View Services Help

IBM F 3 1. Fault Analyzer Preferences...
Comma 2. Batch Reanalysis Options...
3. Interactive Reanalysis Options...

Enter

Interactive Reanalysis Options Line 2 Col 1 80
Command ==> Scroll ==> CSR
Press PF3 to save options or PF12 to cancel.

enter options...

...or refer to a file containing options

Similar process for interactive and batch reanalysis settings are remembered for your TSO ID

Optionen und weitere Tipps

Überschreiben (bei vielen Optionen) – im Dataset

- Batchjob
 - DD-Name IDIOPTS (DSN oder Instream)
- Online

```
-IPT- EDIT DNET074.ADLAB.FILES(FAOPTS) - 01.03
Command ==> █
***** Top of Data *****
000001 DATASETS(
000002     IDILCOB(DNET074.ADLAB.LISTING,
000003         TEST.COBOL.LISTINGS,
000004         PROD.COMPILE.LISTINGS)
000005     IDISYSDB(TEST.SYSDEBUG,
000006         PROD.SYSDEBUG)
000007     IDILPLIE(DNET074.ADLAB.ENTPLI.LISTINGS,
000008         TEST.ENTPLI.LISTINGS,
000009         PROD.ENTPLI.LISTINGS)
000010 )
***** Bottom of Data *****
```

Überschreiben im Batch – verschiedene DD-Namen

- //IDIHIST DD Fault history file
- //IDISYSDB DD Sysdebug files (alle Spr.)
- //IDILC DD C compiler listings
- //IDILCOB DD COBOL compiler listings
- //IDILCOBO DD OS/VS COBOL complist.
- //IDILPLI DD PL/I compiler listings
- //IDIADATA DD Assembler sysadata file
- //IDILANGX DD Langx files (alle Spr.)

Kein Fault Analyzer nutzen

- `//IDIOFF DD DUMMY`
oder
- `//IDIOPTS DD *
EXCLUDE`

Fault Eintrag sichern

- Fault entries werden aus History File gelöscht
- eigenes History file allokkieren (Basis Original)
- der Fault Entry ist ein PDS member
- kopieren – fertig

Minidump erzeugen

- IDISNAP wird mit Fault Analyzer ausgeliefert
- Kontrolle geht an den Aufrufer zurück
- Aufruf mit CALL – fertig
- falls MiniDump unterdrückt wegen Größenüberschreitung
 - Meldung in JESMSG LG:
+IDI0052I 11490 page minidump suppressed from the fault entry being created . . . Dann sind nur die Funktionen "S" und "V" nutzbar
 - überschreiben mit
//IDIOPTS DD *
MAXMINIDUMPPAGES(12000)

Dumpaufbereitung im ISPF – Regionsize!

- Limit per Default: `StoragePrintLimit(256K)`
 - mit `//IDIPTS` änderbar
- keine Anzeige im ISPF möglich, dann Batch Aufbereitung
- Batch mit Grenze für pages oder JES-Limit?
 - auf Datei ausgeben

History-File zu klein

- “unpassende” Meldung:
Data set x is not a valid Fault Analyzer history file
- (nur Cobra: es existiert ein Workaround)

Lookat – Webseite der IBM

- Original-Website zu Lookat:
 - www.ibm.com/systems/z/os/zos/bkserv/lookat/index.html
- besser:
 - www.ibm.com und Suche nach lookat

Weitere Informationen

- z/OS Problem Determination Tools
 - www.ibm.com/software/awdtools/deployment
- Redbook: "Introduction to the IBM Application Development Tools on z/OS and OS/390"
 - <http://www.redbooks.ibm.com/> und suche nach AD Tools
- Webbased Training
 - <http://www.ibm.com/software/info/education/assistant/>
 - other IBM products
 - Fault Analyzer for z/OS
 - Web-based training

-
- Einführung und Überblick
 - Exkurs in die Theorie
 - Produktüberblick
 - Realtime Analysis
 - Online Interface
 - Interactive Reanalysis / Batch Reanalysis
 - CICS / DB2 / IMS
 - Compileliste bereitstellen
 - Optionen und weitere Tipps
 - Zusammenfassung – Diskussion – Austausch

