What's New in IMS Tools ?

E08

Elmer Rohde

Las Vegas, NV **September 15 - September 18, 2003**

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RETURN TO INDEX

AGENDA

- INTRODUCTION
- IMS TOOLS Sessions
- New Products / Ver / Rel since last IMS Tech Conf
- IMS Tools for IMS V9
- Requirements Answered
- What could be next

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INTRODUCTION

- Elmer C.Rohde
  - IBM from 1967 - 1996
    - CE, PSR, IMS
  - ICING 1997 - 1999
    - Contract Employee
  - IMS Tools 2000 - 2003
    - Marketing/Requirements

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IMS Tools Sessions

Session	Day	Time	Subject
F01	Mon	10:15	DB2 IMS Tools
H01	Mon	12:45	HPCA Workshop
C01	Mon	12:45	Customer (Connect)
E08	Mon	2:15	What's New in Tools
H03	Mon	2:15	Connect Wrkshp P1
E55	Mon	4:00	HALDB Conv Aid
H03	Mon	4:00	Connect Wrkshp P2
E87	Tue	8:30	IMS PI & PA
E36	Tue	8:30	IMS Connect
H04	Tue	8:30	HALDB Conv WS P1
E35	Tue	10:15	Connect Debugging

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IMS Tools Sessions

Session	Day	Time	Subject
E89	Tue	10:15	DRF
H04	Tue	10:15	HALDB Conv WS P2
E90	Tue	1:15	IMS PM
E68	Tue	1:15	Lib Intg Utl
H05	Tue	4:30	DBCS Workshop
E87	Wed	10:15	IMS PI & PA
E90	Wed	10:15	IMS PM
H05	Wed	10:15	DBCS Workshop
E36	Wed	1:15	Connect How/Why
E89	Wed	1:15	DRF
H04	Wed	1:15	HALDB Conv WS P1

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IMS Tools Sessions

Session	Day	Time	Subject
E35	Wed	2:45	Connect Debugging
H04	Wed	2:45	HALDB Conv WS P2
E39	Wed	4:30	Connect User Exits
H01	Wed	4:30	HPCA Workshop
C05	Thur	8:30	Customer DBCS

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IMS Tools

Database Administration

- IMS High Performance Unload 5655-E06
- IMS High Performance Load 5655-E07
- IMS High Performance Prefix Resolution V2 5655-I15
- IMS Index Builder V2.R3 5655-E24
- IMS Parallel Reorganization V2 5655-F74
- IMS High Performance Pointer Checker V2 5655-K53
- IMS Data Base Repair Facility 5655-E03
- IMS High Performance Sysgen Tool 5655-F43
- IMS Command Control Facility 5655-F40
- IMS ETO Support 5655-E12
- IMS Library Integrity Utilities 5655-I42
- IMS Sequential Randomizer Generator 5655-E11
- IMS Compression - Extended 5655-E02
- IMS Data Base Control Suite V2R2 5655-F76
- IMS Fast Path Basic Tools 5655-E30
  - DEDB Unload/Reload
  - DEDB Pointer Checker
  - DEDB Tuning Aid
- IMS Fast Path Online Tools V2 5655-F78
  - Online Pointer Checker
  - Online Data Extract
  - Online Area Extend
- IMS HALDB Conversion and Maintenance Aid V2 5655-K47
- Batch Backout Manager 5697-H75
- Data Encryption V1 5799-GWD
- IMS Online Reorg Facility 5655H97 ESP ONLY

Performance Management

- IMS Performance Analyzer V3R2 5655-E15
- IMS Network Compression Facility 5655-E41
- IMS Queue Control Facility V1.2 5697-E99
- IMS Workload Router V2.3 5697-B87
- IMS Buffer Pool Analyzer 5697-H77
- IMS Problem Investigator 5655-K50
- IMS Performance Monitor 5655-G50 ESP ONLY

Recovery / Replication

- IMS Image Copy Extensions V2R1 5655-J56
- IMS DEDB Fast Recovery V2R2 5655-E32
- Application Rec Tool for IMS & DB2 V1R2 5697-F56
- Online Recovery Service (ORS) 5655-E50
- IMS Data Propagation V3R1 5655-E52
- IMS High Perf Change Accumulation 5655-F59
- IMS Database Recovery Facility 5655-I44

Application Management

- IMS Connect V2R1 5655-E52
- IMS M FS Reversal Utilities 5655-F45
- IMS Program Restart Facility 5655-E14
- Batch Terminal Simulator V3 5655-J57
- IMS Multi-Dialog Manager 5697-H91

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Encryption for IMS and DB2 Databases 1.1 Overview

- **Easy panel driven data entry function helps build the appropriate JCL jobstream to create an encryption exit**
- **Implementation using the standard IMS Segment/Edit Compression and DB2 EDITPROC exits.**
- **Requires Security Analyst/System Programmer expertise to set up an encryption key token or tokens using z/OS Integrated Cryptographic Services Facility (ICSF) before this product can be utilized**

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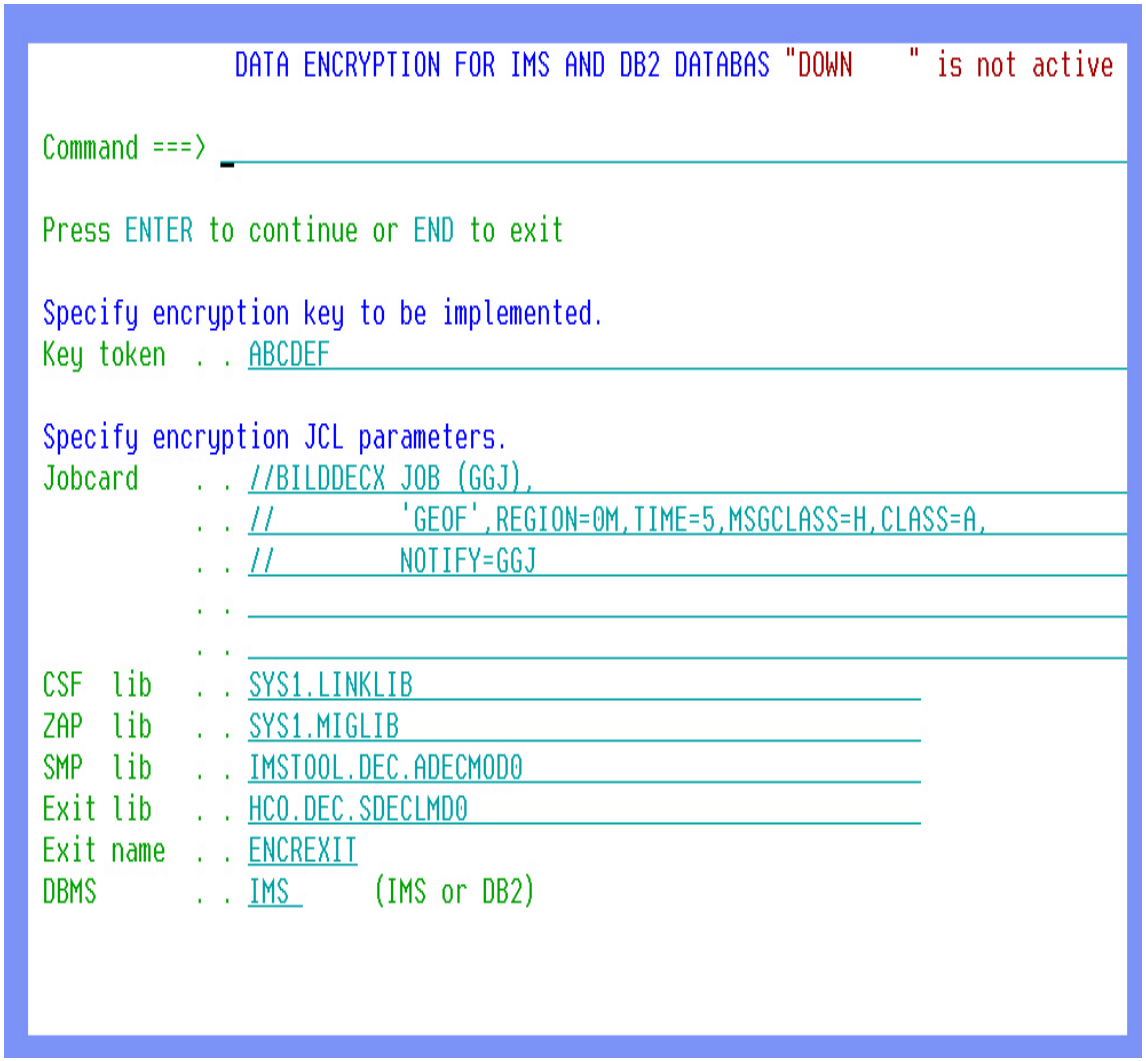
Encryption for IMS and DB2 Databases
Data Entry Panel Populated for an IMS Exit



Need help?

- Press F1 if you need guidance setting up JCL parameters

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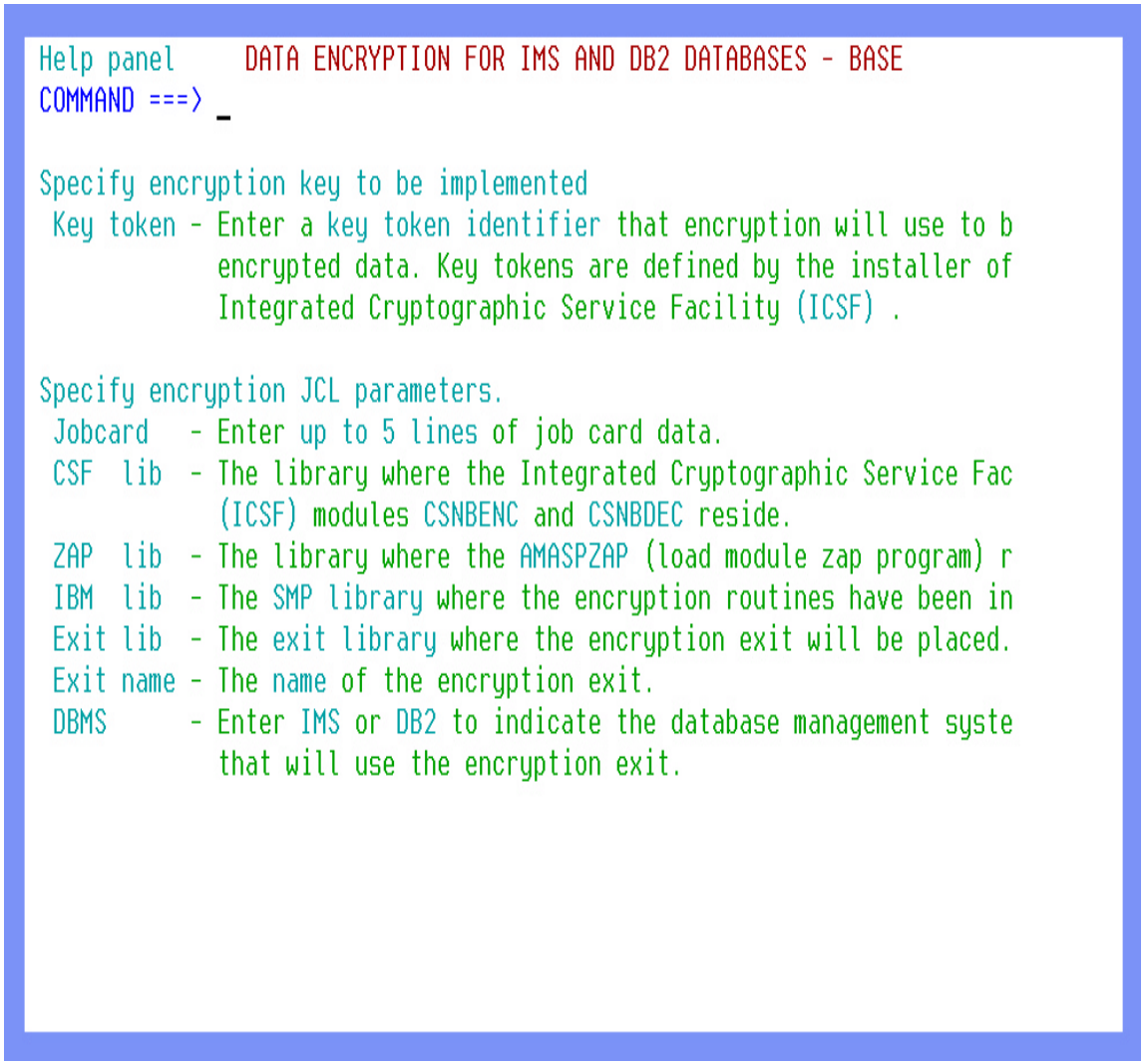
Encryption for IMS and DB2 Databases
Data Entry Help Panel



```
Help panel     DATA ENCRYPTION FOR IMS AND DB2 DATABASES - BASE
COMMAND ===> _

Specify encryption key to be implemented
 Key token - Enter a key token identifier that encryption will use to b
             encrypted data. Key tokens are defined by the installer of
             Integrated Cryptographic Service Facility (ICSF) .

Specify encryption JCL parameters.
 Jobcard   - Enter up to 5 lines of job card data.
 CSF  lib  - The library where the Integrated Cryptographic Service Fac
             (ICSF) modules CSNBENC and CSNBDEC reside.
 ZAP  lib  - The library where the AMASPZAP (load module zap program) r
 IBM  lib  - The SMP library where the encryption routines have been in
 Exit lib  - The exit library where the encryption exit will be placed.
 Exit name - The name of the encryption exit.
 DBMS      - Enter IMS or DB2 to indicate the database management syste
             that will use the encryption exit.
```

More help?

- Further information is avaialble in the Users Guide and the ICSF publications

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Encryption for IMS and DB2 Databases

ISPF Edit Job Submission Panel - First Step of IMS Job

```
 File  Edit  Edit_Settings  Menu  Utilities  Compilers  Test  Help
EDIT       GGJ.JCLOUT                                  Columns 00001 00072
Command ===> _                                           Scroll ===> PAGE
****** ******************************** Top of Data ********************************
000001 //BILDDECX JOB (GGJ),
000002 //         'GEOF',REGION=0M,TIME=5,MSGCLASS=H,CLASS=A,NOTIFY=GGJ
000003 //*********************************************************************
000004 //* Linkedit the encryption routines into the IMS exit
000005 //*********************************************************************
000006 //LINK     EXEC PGM=IEWL,PARM='LIST,XREF,RENT'
000007 //SYSPRINT  DD SYSOUT=*
000008 //SYSUDUMP  DD SYSOUT=*
000009 //SDECLMD0  DD DSN=IMSTOOL.DEC.ADECMOD0,DISP=SHR
000010 //SCSFMOD0  DD DSN=SYS1.LINKLIB,DISP=SHR
000011 //SYSUT1    DD UNIT=SYSALLDA,SPACE=(1024,(50,50))
000012 //SYSLMOD   DD DSN=HCO.DEC.SDECLMD0(ENCREXIT),DISP=SHR
000013 //SYSLIN    DD *
000014   INCLUDE SDECLMD0(DECENC01)
000015   INCLUDE SCSFMOD0(CSNBENC)
000016   INCLUDE SCSFMOD0(CSNBDEC)
000017   ENTRY DECENC01
000018   NAME ENCREXIT(R)
000019 /*
```

Note:

- This step linkedits the product supplied IMS exit **DECENC01** into the user's exit library as a member called **ENCREXIT**

Previous task: data entry for an IMS exit

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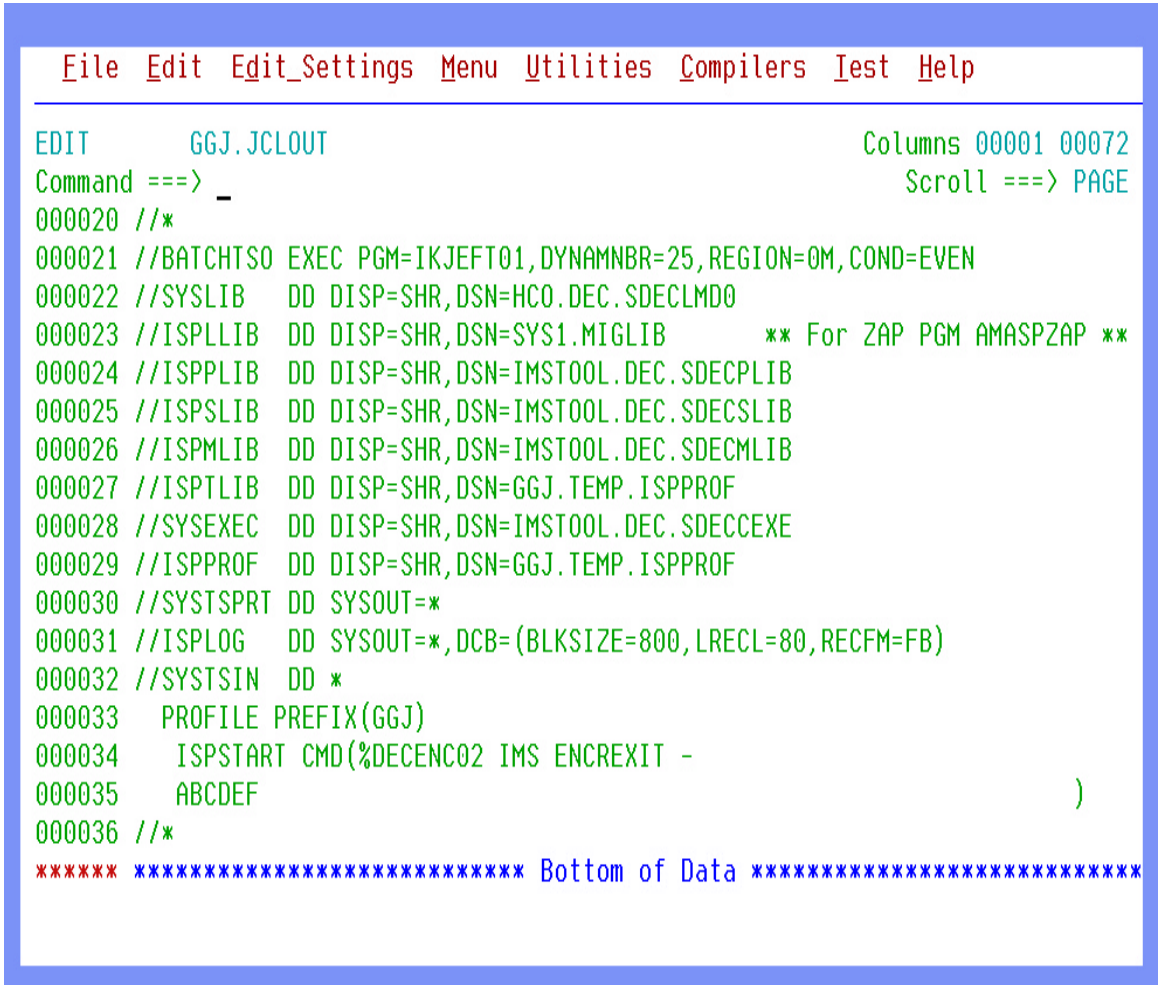
Encryption for IMS and DB2 Databases
ISPF Edit Job Submission Panel - Second Step of IMS Job



```
 File  Edit  Edit_Settings  Menu  Utilities  Compilers  Iest  Help
EDIT       GGJ.JCLOUT                                  Columns 00001 00072
Command ===> _                                           Scroll ===> PAGE
000020 //*
000021 //BATCHTSO EXEC PGM=IKJEFT01,DYNAMNBR=25,REGION=0M,COND=EVEN
000022 //SYSLIB   DD DISP=SHR,DSN=HCO.DEC.SDECLMD0
000023 //ISPLLIB  DD DISP=SHR,DSN=SYS1.MIGLIB       ** For ZAP PGM AMASPZAP **
000024 //ISPPLIB  DD DISP=SHR,DSN=IMSTOOL.DEC.SDECPLIB
000025 //ISPSLIB  DD DISP=SHR,DSN=IMSTOOL.DEC.SDECSLIB
000026 //ISPMLIB  DD DISP=SHR,DSN=IMSTOOL.DEC.SDECMLIB
000027 //ISPTLIB  DD DISP=SHR,DSN=GGJ.TEMP.ISPPROF
000028 //SYSEXEC  DD DISP=SHR,DSN=IMSTOOL.DEC.SDECCEXE
000029 //ISPPROF  DD DISP=SHR,DSN=GGJ.TEMP.ISPPROF
000030 //SYSTSPRT DD SYSOUT=*
000031 //ISPLOG   DD SYSOUT=*,DCB=(BLKSIZE=800,LRECL=80,RECFM=FB)
000032 //SYSTSIN  DD *
000033   PROFILE PREFIX(GGJ)
000034    ISPSTART CMD(%DECENC02 IMS ENCREXIT -
000035    ABCDEF                                          )
000036 //*
****** ***************************** Bottom of Data ******************************
```

Note:

- This step ZAPs the ICSF administrator defined encryption key token into the IMS exit link-edited in the previous jobstep
- IMS applications can encrypt and decrypt data once a database has been reloaded using a new DBD defined with a COMPRTN name of **ENCREXIT**

Previous task: first step of displayed IMS Job

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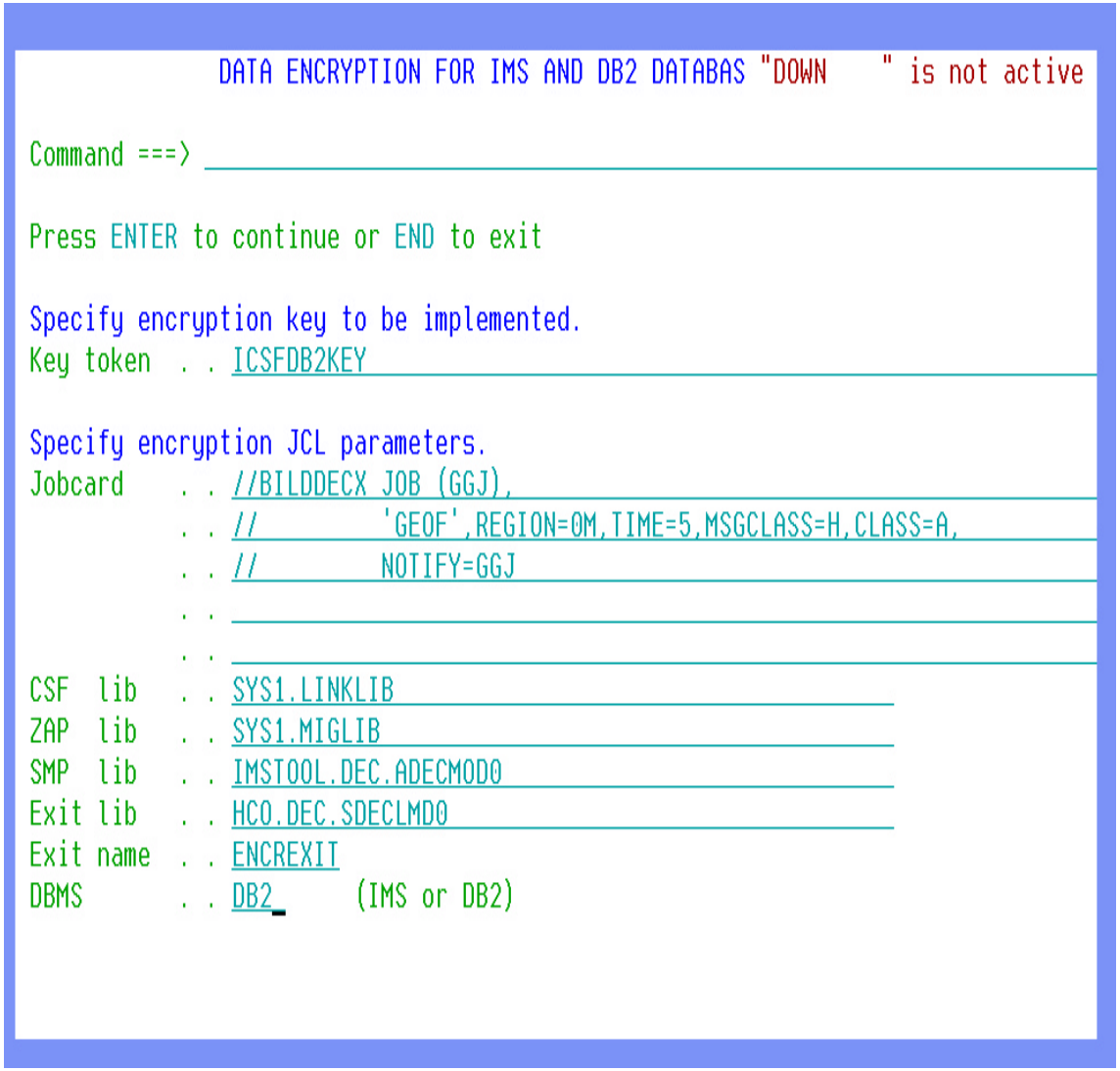
Encryption for IMS and DB2 Databases
Data Entry Panel Populated for a DB2 Exit



Help?

- Press F1 if you need guidance setting up JCL parameters

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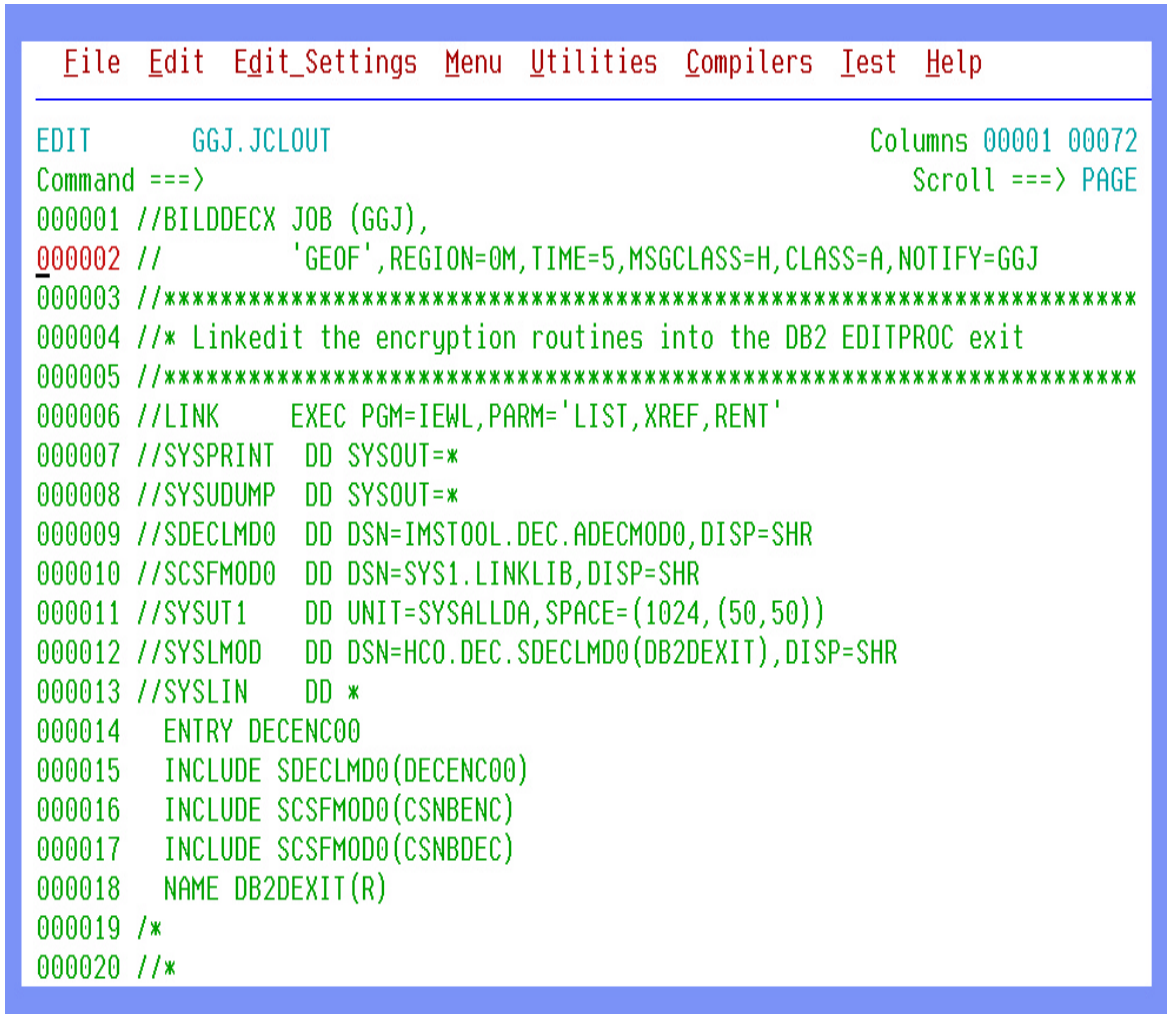
Encryption for IMS and DB2 Databases
ISPF Edit Job Submission Panel - First Step of DB2 Job



```
 File  Edit  Edit_Settings  Menu  Utilities  Compilers  Iest  Help
EDIT       GGJ.JCLOUT                                Columns 00001 00072
Command ===>                                           Scroll ===> PAGE
000001 //BILDDECX JOB (GGJ),
000002 //         'GEOF',REGION=0M,TIME=5,MSGCLASS=H,CLASS=A,NOTIFY=GGJ
000003 //*********************************************************************
000004 //* Linkedit the encryption routines into the DB2 EDITPROC exit
000005 //*********************************************************************
000006 //LINK     EXEC PGM=IEWL,PARM='LIST,XREF,RENT'
000007 //SYSPRINT  DD SYSOUT=*
000008 //SYSUDUMP  DD SYSOUT=*
000009 //SDECLMD0  DD DSN=IMSTOOL.DEC.ADECMOD0,DISP=SHR
000010 //SCSFMOD0  DD DSN=SYS1.LINKLIB,DISP=SHR
000011 //SYSUT1    DD UNIT=SYSALLDA,SPACE=(1024,(50,50))
000012 //SYSLMOD   DD DSN=HCO.DEC.SDECLMD0(DB2DEXIT),DISP=SHR
000013 //SYSLIN    DD *
000014   ENTRY DECENC00
000015   INCLUDE SDECLMD0(DECENC00)
000016   INCLUDE SCSFMOD0(CSNBENC)
000017   INCLUDE SCSFMOD0(CSNBDEC)
000018   NAME DB2DEXIT(R)
000019 /*
000020 //*
```

Note:

- This step linkedits the product supplied DB2 EDITPROC into the user's exit library as a member called **DB2DEXIT** .

Previous panel: data entry for a DB2 Exit

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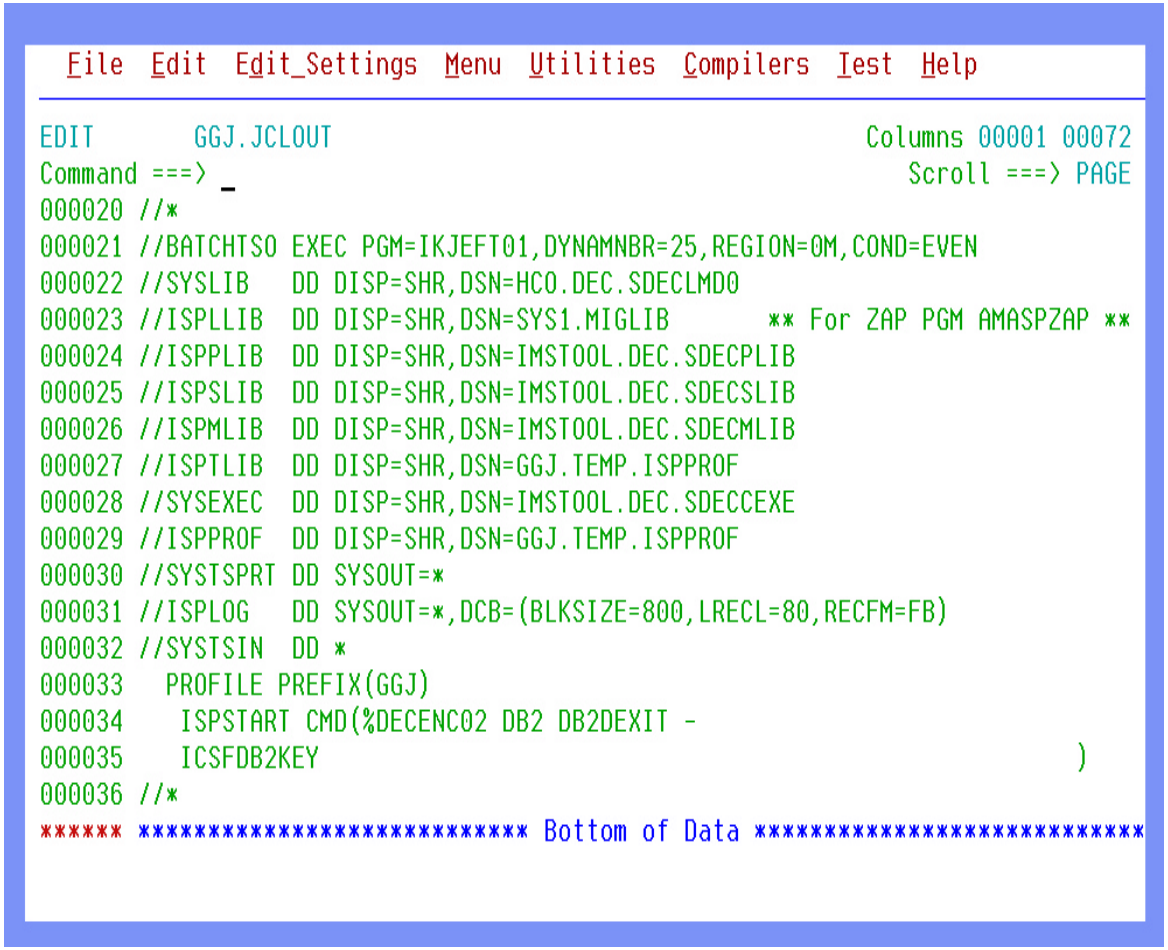
Encryption for IMS and DB2 Databases
ISPF Edit Job Submission Panel - Second Step of DB2 Job



```
 File  Edit  Edit_Settings  Menu  Utilities  Compilers  Test  Help
EDIT       GGJ.JCLOUT                                  Columns 00001 00072
Command ===> _                                           Scroll ===> PAGE
000020 //*
000021 //BATCHTSO EXEC PGM=IKJEFT01,DYNAMNBR=25,REGION=0M,COND=EVEN
000022 //SYSLIB   DD DISP=SHR,DSN=HCO.DEC.SDECLMD0
000023 //ISPLLIB  DD DISP=SHR,DSN=SYS1.MIGLIB       ** For ZAP PGM AMASPZAP **
000024 //ISPPLIB  DD DISP=SHR,DSN=IMSTOOL.DEC.SDECPLIB
000025 //ISPSLIB  DD DISP=SHR,DSN=IMSTOOL.DEC.SDECSLIB
000026 //ISPMLIB  DD DISP=SHR,DSN=IMSTOOL.DEC.SDECMLIB
000027 //ISPTLIB  DD DISP=SHR,DSN=GGJ.TEMP.ISPPROF
000028 //SYSEXEC  DD DISP=SHR,DSN=IMSTOOL.DEC.SDECCEXE
000029 //ISPPROF  DD DISP=SHR,DSN=GGJ.TEMP.ISPPROF
000030 //SYSTSPRT DD SYSOUT=*
000031 //ISPLOG   DD SYSOUT=*,DCB=(BLKSIZE=800,LRECL=80,RECFM=FB)
000032 //SYSTSIN  DD *
000033   PROFILE PREFIX(GGJ)
000034    ISPSTART CMD(%DECENC02 DB2 DB2DEXIT -
000035    ICSFDB2KEY                                          )
000036 //*
****** ***************************** Bottom of Data ******************************
```

Note:

- This step ZAPs the ICSF administrator defined encryption key token into the IMS DB2 exit link-edited in the previous jobstep
- DB2 applications will now be able to encrypt and decrypt data when they access EDITPROC **DB2DEXIT**

Previous task: first step of displayed DB2 job

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Encryption for IMS and DB2 Databases 1.1 Summary

- **Easy panel driven data entry function helps build the appropriate JCL jobstream to create an encryption exit**
- **Easy to read documentation**
- **Implementation using the standard IMS Segment/Edit Compression and DB2 EDITPROC exits.**
- **Questions: m2saint@us.ibm.com**

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Highlights of IMS HP Pointer Checker Version 2

This new version improves performance and needs less DASD space!

- **Main New enhancements**
  - **Performance is improved by:**
    - **Parallel Scans of Databases**
    - **Introducing Smaller Sort Records**
    - **Eliminating the Merge Step**
    - **Optimizing Work Buffers and Providing VSCR relief**
  - **Usability is improved with simplified setup and operation**
  - **Reporting is improved**
    - **Decoding DBD source**
    - **Creating DBD map**
  - **Performance Evaluation**

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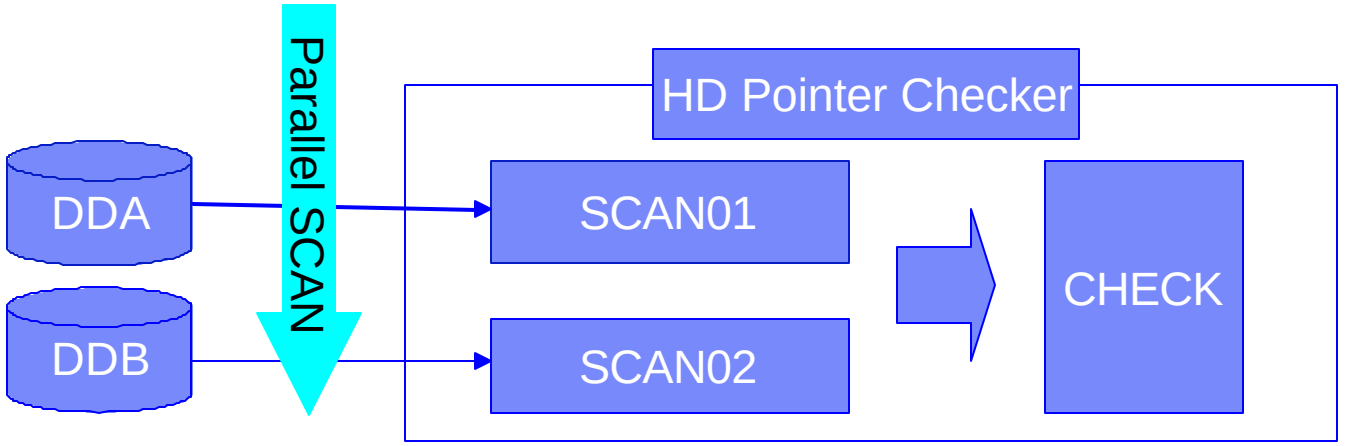
Performance Improved by Parallel Scans of Databases

- New option SCANGROUP= is introduced.
- Database data sets and Image Copy data sets are read in parallel between different scan groups.
- Example: DDA and DDB are scanned in parallel

```
//PROCCTL  DD
TYPE=ALL
DATABASE  DB=DB1,DD=DDA,SCANGROUP=01
DATABASE  DB=DB1,DD=DDB,SCANGROUP=02
```



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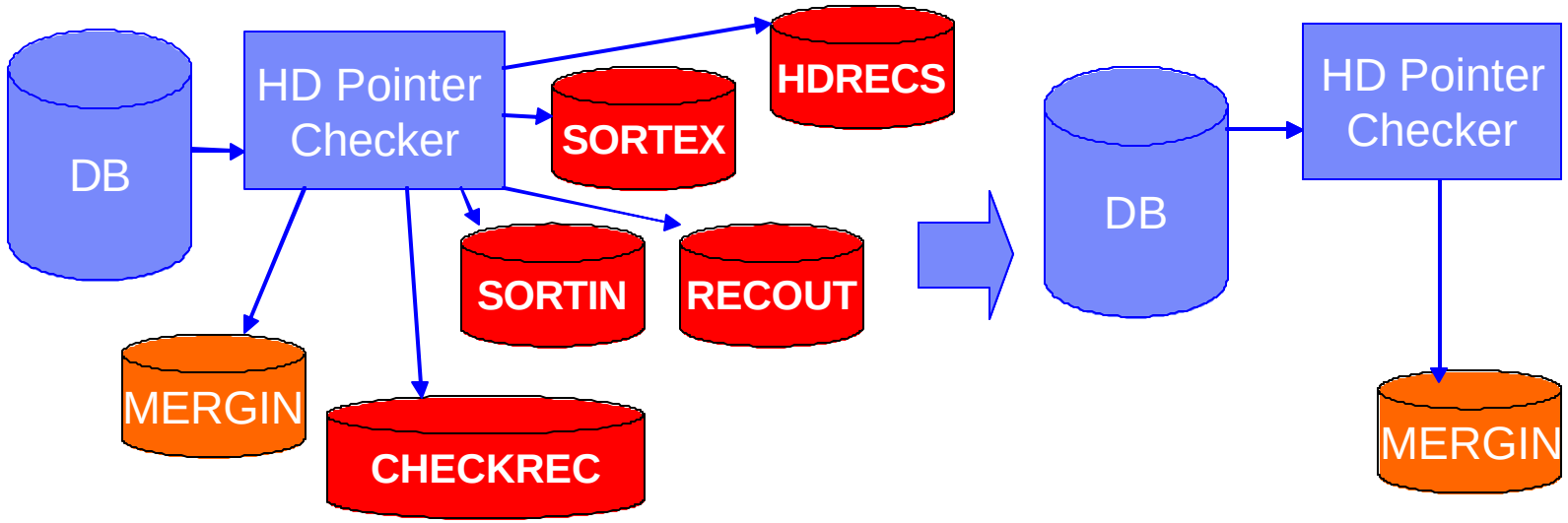
Performance Improved by Smaller Sort Records

- Both quantity and record length of sort record are reduced.

Smaller DASD space

- Only MERGIN work data set remains*.

*: When PROC TYPE=ALL,IXKEYCHK=NO,EPSCHK=NO is specified in the PROCCTL data set



IMS HP Pointer Checker V1 **IMS HP Pointer Checker V2**

Performance Improved by:

- Eliminating the Merge Step
  - Eliminating the merge step of segment and pointer records.
  - Reading sequentially segment and pointer records instead of the Merge step.
- Optimizing Work Buffers
  - Optimizing work buffers of work data sets.
- Providing VSCR relief
  - Work buffers and some internal control blocks are moved to above 16M.

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Usability improved with simplified Setup and operation

- Installation
  - Simple IVP job that generates a short report is provided.
- JCL
  - The number of work data sets is reduced. Estimation of DASD space becomes simpler.
  - Need not separate SCAN jobs from CHECK job to scan the databases in parallel. All you need to do is specify SCANGROUP option in one job.
- Report only option
  - New option PTRCHK=NO is introduced. The option avoids pointer checking and generates only statistics reports.

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Reporting Improved

- New Reports
  - DBD Source and DBD Map by new options, DECODEDBD and MAPDBD
  - These functions are provided in conjunction with IMS Library Integrity Utilities for z/OS Version 1 Release 1 (5655-I42)

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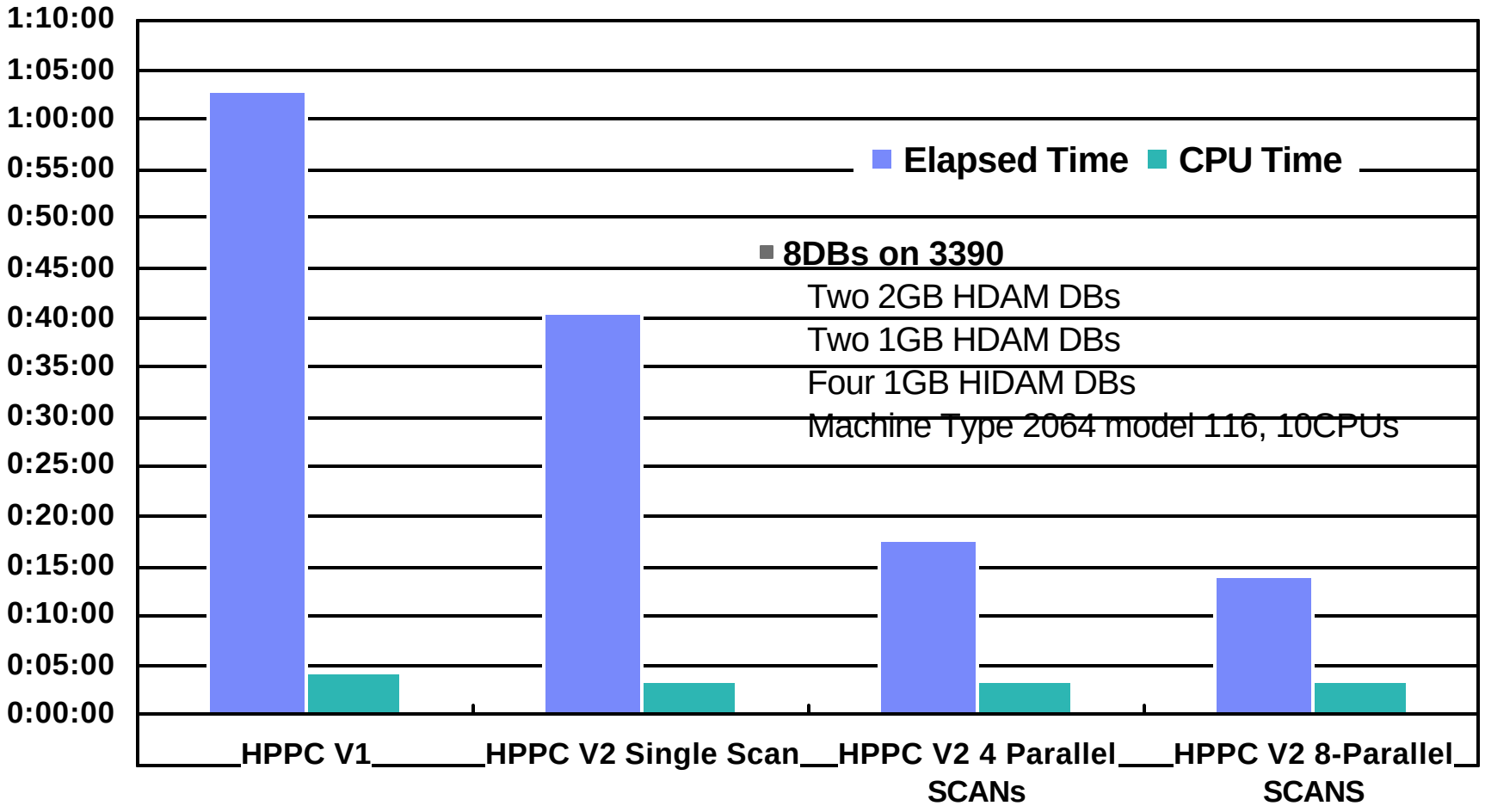
Performance Evaluation



The total elapsed time is reduced to 22% of Version 1 by parallel scanning.

The size of work data sets is a third less than Version 1.

Note: This material has not been submitted to any formal IBM test and is published AS IS.

Since this test result is an example, this may not always be the case.

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IMS Tools that will Support V9

Product Name	ACM	VRM	PID	Supported
IMS HD Compression Extended	HDC	2.2.0	5655-E02	12/27/2003
IMS DB Repair Facility	DB Repair	1.1.0	5655-E03	12/27/2003
IMS High Performance Unload	HP UL	1.1.0	5655-E06	12/27/2003
IMS High Performance Load	HP RL	1.1.0	5655-E07	12/27/2003
IMS Image Copy Extensions	ICE	2.1.0	5655-E10	01/31/2004
IMS Sequential Randomizer Generator	SRG	1.1.0	5655-E11	12/27/2003
IMS ETO Support	ETOS	2.2.0	5655-E12	12/27/2003
IMS Program Restart Facility	PRF	2.1.0	5655-E14	12/27/2003
IMS Performance Analyzer V3	IMS PA	3.2.0	5655-E15	12/27/2003
IMS Index Builder V2	IB	2.3.0	5655-E24	12/27/2003
IMS Fast Path Basic Tools	FPB	1.2.0	5655-E30	01/31/2004
IMS DEDB Fast Recover	DFR	2.1.0	5655-E32	12/27/2003
IMS DataPropagator V3	DPROP	3.1.0	5655-E52	12/27/2003
IMS Command Control Facility	CCF	1.1.0	5655-F40	12/27/2003
IMS High Performance Sysgen Tools	HP SG	1.1.0	5655-F43	12/27/2003
IMS MFS Reversal Utilities	MFSR	1.1.0	5655-F45	12/27/2003
IMS Parallel Reorg V2	IPR	2.1.0	5655-F74	12/27/2003

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IMS Tools that will Support V9 (cont)

Product Name	ACM	VRM	PID	Supported
IMS Database Control Suite V2.2	DBCS	2.2.0	5655-F76	12/27/2003
IMS Fast Path Online Tools	FPO	2.1.0	5655-F78	01/31/2004
IMS Performance Monitor	*IMS PM*	*1.1.0*	*5655-G50*	*06/30/2004*
IMS Online Reorg Facility	*OLRF*	*1.1.0*	*5655-H97*	*06/30/2004*
IMS High Performance Prefix Res	HP PR	2.1.0	5655-I15	12/27/2003
IMS Library Integrity Utilites	LIU	1.1.0	5655-I42	12/27/2003
IMS DataBase Recovery Facility	DRF	2.1.0	5655-I44	01/06/2004
IMS Batch Terminal Simulator V3	BTS	3.1.0	5655-J57	12/27/2003
IMS HALDB Conv & Maint Aid	HALDB	2.1.0	5655-K47	12/27/2003
IBM Problem Investigator	IMS PI	1.1.0	5655-K50	12/27/2003
IMS Connect	IMS C	2.1.0	5655-K52	12/27/2003
IMS High Performance Ptr Chk	HP PC	2.1.0	5655-K53	12/27/2003
IMS ADF V2	ADF	2.1.1	5665-348	12/27/2003
IMS Data Refresher	DREF	1.1.1	5696-703	12/27/2003

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IMS Tools that will Support V9 (cont)

Product Name	ACM	VRM	PID	Supported
IMS Workload Router V2	WLR	2.3.0	5697-B87	12/27/2003
IMS Netwk Compression Fac	IMS NCF	1.1.0	5697-E41	12/27/2003
IMS Queue Control Facility	IMS QCF	1.2.0	5697-E99	12/27/2003
IMS Batch Backout Manager	BBM	1.1.0	5697-H75	12/27/2003
IMS Buffer Pool Analyzer	BPA	1.1.0	5697-H77	12/27/2003
IMS Multi-Dialog Manager	MDM	1.1.0	5697-H91	12/27/2003
OS/VS DB/DC Data Dictionary	DD	6.0.0	5740-XXF	12/27/2003
IMS Ckp Wrapper (PRPQ)	CKP W	1.1.0	5799-GLT	12/27/2003
IMS Data Encryption	IMS DE	1.1.0	5799-GWD	12/27/2003

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IMS Tools that will NOT Support V9

Product Name	ACM	VRM	PID	Comments
IMS Batch Terminal Simulator V2	BTS	2.1.0	5655-A14	USE 5655-J57
IMS Library Management Utilities	LMU	1.1.0	5655-E04	USE 5655-I42
IMS Advanced ACB Generator	ACB Gen	1.1.0	5655-E05	USE 5655-I42
IMS High Performance Ptr Ckr	HP PC	1.1.0	5655-E09	USE 5655-K53
IMS Image Copy Extensions	ICE	1.1.0	5655-E10	USE V2.1.0
IMS Recovery Saver	IMS RS	2.1.0	5655-E16	Must use DRF
IMS Online Recovery Services	ORS	1.1.0	5655-E50	Must use DRF
IMS Connect	IMS C	1.1.0	5655-E51	USE 5655-K52
IMS Connect	IMS C	1.2.0	5655-E51	USE 5655-K52
IMS HALDB Conversion Tool	HALDB	1.1.0	5655-I01	USE 5655-K47
IMS High Perf Change Accum	HP CA	1.1.0	5655-F59	USE V2.1.0

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