



# IBM Data Management Tools Product Strategies, Portfolio, and Futures August 2002

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Plans subject to change

IBM Software Group

# Agenda

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- Data Management Tools Business Overview
- IMS Tools Portfolio
- IMS Tools Sneak Peek
- Summary

# Data Management Tools - Business Overview

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- Data Management Tools is a unique model in the database tools industry
- Investment increased to support future needs
- Comprehensive solutions now and more coming
- Independent of database server versions (release cycles)
- Multiplatform direction
- Common interfaces
- Cross-tool integration
- Products tested under same configurations and workloads as DB2 and IMS

# Data Management Tools - Business Strategy

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- Continue to improve and expand portfolio
  
- Focus
  - ▶ New products
  - ▶ Product enhancements
  
- Remain flexible and responsive to customers
  - ▶ Adjust plans to accommodate customer requirements as business dictates
  - ▶ Deliver enhancements in expeditious manner
  
- Ensure satisfaction of existing customers
  - ▶ Service excellence
  - ▶ Responsiveness to new requests

# IMS Tools Product Portfolio - September 2002

## Database Administration (19)

- ▶ **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 5655-E09**
- ▶ **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 Management Utilities 5655-E04**
- ▶ **IMS Advanced ACBGEN 5655-E05**
- ▶ **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 High Availability Large Database Conversion Aid 5655-I01**
- ▶ **Batch Backout Manager 5697-H75**

## Performance Management (5)

- ▶ **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**

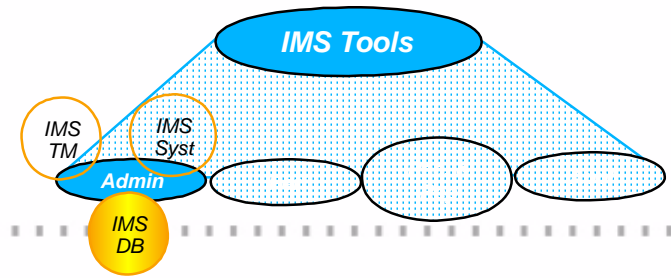
## Recovery / Replication (6)

- ▶ **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 Performance Change Accumulation 5655-F59**

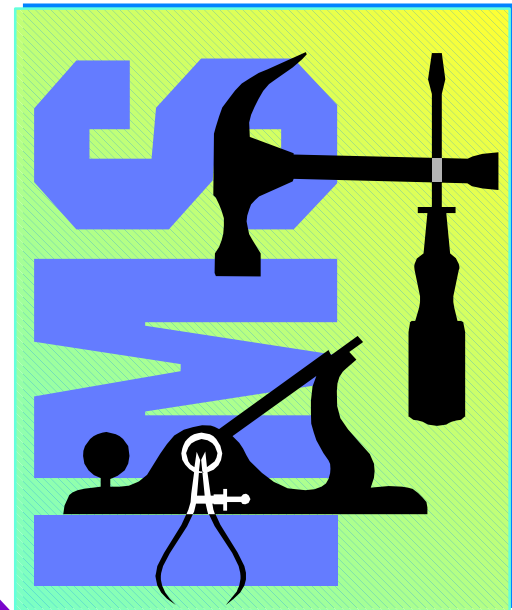
## Application Management (4)

- ▶ **IMS Connect V1R2 5655-E51**
- ▶ **IMS Message Format Services Reversal Utilities 5655-F45**
- ▶ **IMS Program Restart Facility 5655-E14**
- ▶ **Batch Terminal Simulator V3 5655-J57**

# IMS Tools for ...



## *IMS DB Administration*



# DB Reorganization

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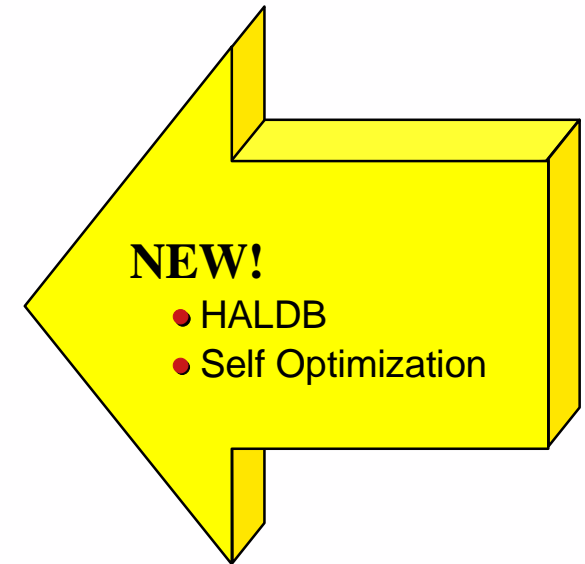
- All IMS DB users have a need to reorganize DBs on a regular basis
  - ▶ The pressure for increasing availability creates ever growing demands for fast reorganization utilities
- The products that support reorganization of full function DBs\* are
  - ▶ IMS High Performance Unload (5655-E06)
  - ▶ IMS High Performance Load (5655-E07)
  - ▶ IMS High Performance Prefix Resolution (5655-I15)
  - ▶ IMS Index Builder (5655-E24)
  - ▶ IMS Parallel Reorg V2 (5655-F74)

\* “Full Function DBs” are HISAM, HDAM, HIDAM, PHDAM, PHIDAM, secondary index and PSIndex

# IMS High Performance Unload

V8  
Support

- Includes full support for HALDB
  - ▶ unload one, several or all partitions
  - ▶ migration/fallback support
- DB Unload Utilities
  - dynamic allocation of DB datasets
  - option to leave compressed data compressed
  - multiple unload formats
  - can unload broken DBs
  - variety of statistical reports
- Application programming interface
  - ▶ Includes HSSR's API
    - for stand-alone batch programs
    - transparent to programmer
- Sequential Subset Randomizer
  - Randomizing module to enable fast sequential processing of DB subset





# IMS High Performance Load

V8  
Support


- DB Load Utility
  - ▶ complements High Performance Unload Utility
    - compressed/uncompressed input in various formats
    - dynamic allocation of DB datasets
  - ▶ supports HDAM, HIDAM, HISAM, SHISAM and HALDB
    - including a high-speed alternative to IMS Partition Initialization Utility
    - and migration reload
  - ▶ can be used to initialize empty DBs
- HDAM /HIDAM PSSR Utility

**NEW!**

- HALDB
- Self Optimization

Avoids “cascading” on Reload (when too many roots randomise to same block)

# High Performance Prefix Resolution

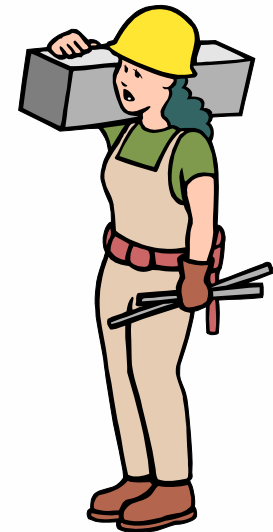


V8  
Support

- Performs the same functions as the IMS Prefix Resolution utility (DFSURG10) but with considerably reduced elapsed times.
- Prefix resolution is a required step for resolving pointers for databases containing logical relationships and for creating or recreating secondary indices.
- A data transfer service called HPPRPIPE is used to eliminate the intermediate Work File 2 (WF2) data set, which avoids much of the I/O, tape handling, and DASD requirements often associated with prefix resolution.
  - ▶ does not require the BatchPipes®/MVS™ subsystem.

# IMS Index Builder

- Add or Rebuild all or some secondary indexes of an IMS database
  - ▶ Using as input:
    - Output from initial load or reload after a reorg
    - DL/I scan of the IMS database
    - Output from prefix resolution (DFSURIDX)
  - ▶ Supports empty secondary indexes
  - ▶ Easy-to-use one step procedure
  - ▶ Sorts and Loads Multiple Indices in Parallel
- Rebuild HIDAM primary index
- DBRC notification support
- HALDB support for IMS V7
- Separate sort address spaces will be created
- Duplicate Record Processing to Spill File
- Will not terminate if error on one index.
- When building primary index, the index may be empty or not
- Supports building HALDB primary indexes



# IMS Parallel Reorganization V2

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- Replaces IMS Parallel Reorganization V1
  - ▶ Support IMS V6, IMS V7 and IMS V8
- Functional Improvements
  - ▶ Execution of the following utilities in one address space
    - IMS HP Unload
    - IMS HP Load
    - IMS Index Builder
  - ▶ Dynamic allocation of Input and Output database datasets
  - ▶ Full DBRC support, including DBRC notification
  - ▶ Automated name swapping
  - ▶ Automated IMS Command Processing



# IMS HALDB Conversion Aid 5655-I01

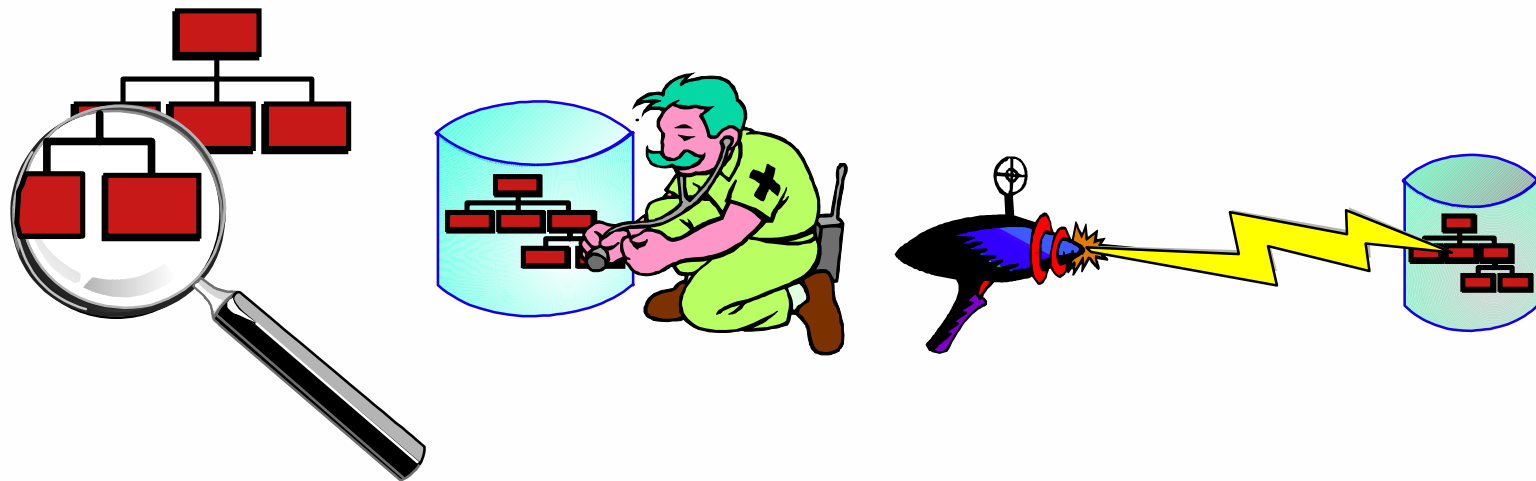
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- An easy-to-use ISPF front-end
  - ▶ HALDB conversion requires a skilled DBA. As these skills are not freely available, this tool supports migration without a skilled DBA.
  - ▶ The conversion process is guided by an ISPF application.
    - It allows you to model the partitions (via ISPF dialog or by standard setup rules).
    - The DBD and DBRC definitions are created.
    - The HALDB partition datasets are allocated.
    - The conversion JCL is created.
    - The conversion process can be monitored.
- Automatic DBD conversion
- Conversion of TEST databases
- Index pointer healing
- Partition modeling tool
- Requires no HALDB experience and little IMS expertise

# DB Health Checking

- All IMS DB users have a need to
  - ▶ Check for pointer errors
  - ▶ Repair bad pointers or segment data
  - ▶ Monitor space usage and other aspects that might require DB Reorganization
- New tools for DB Health checking
  - ▶ IMS High Performance Pointer Checker (5655-E09)
  - ▶ IMS DB Repair Facility (5655-E03)

***Include full support  
for HALDB***



# IMS HP Pointer Checker

- Replaces DBT SMU key components (Pointer Checker, Space Monitor)
- Executes on DB or image copy
  - ▶ including H/W Concurrent Copy of IMS V6
- Also includes
  - ▶ HD Tuning Aid,
  - ▶ DB Historical Data Analyzer, and
  - ▶ DB Segment Restructure Utility



## Reports include:

- Segment and Pointer Statistics
- Bit Map Displays
- Free Space Maps
- FSE Analysis
- HD Tuning Statistics Report
- DB Record Distribution Statistics Report
- Pointer Validation Reports
- Database Repair Guidelines Report (if necessary)
- Root Allocation Reports (by block and RAP)
- Space Analysis and Data Set Reports (including non-IMS datasets)
  - ▶ includes space exception reports

## Space Monitor Exception reporting:

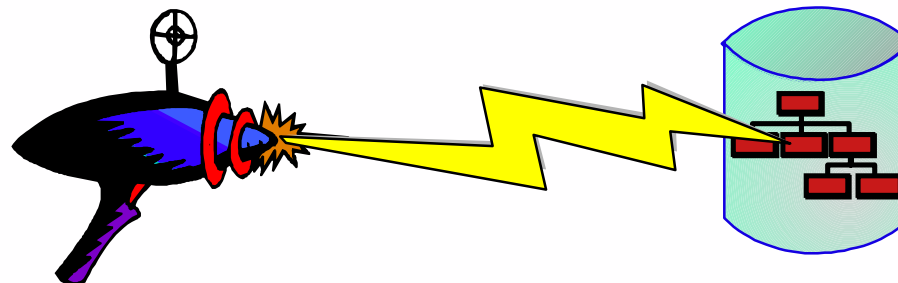
New thresholds can be monitored and reported

- available extents
- CI and CA splits
- used space as % of allocated space
- in last extent (DB or DSet)
- No. of days since last reorg

# DB Repair Facility



- Supports All IMS Databases
  - ▶ VSAM , OSAM and Fast Path DEDB DataBases
  - ▶ Full Function
  - ▶ HALDB
- Interactive via an ISPF front-end
- Includes
  - ▶ Pointer navigation
  - ▶ Display RAPs within Block or CI
  - ▶ Display FSEAP and FSE Chain within Block or CI
  - ▶ Backout safety feature
  - ▶ Audit history





# IMS High Perf. Change Accumulation

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- New tool
- Functionalities
  - ▶ Parallel execution of multiple IMS CA jobs in a single address space.
  - ▶ Parallel streaming of both input and output data
    - Input data from RLDS's
    - Output data to new CA's datasets
    - Single pass of input/output
  - ▶ ISPF and Batch Interface
  - ▶ Automatic submission
  - ▶ Full DBRC Support

*IMS HP CA provides an environment in which multiple CA jobs can be run in parallel, instead of in sequence.*

# Other DB Administration Tools

- Library Management Utilities 5655-E04

- ▶ DBD/PSB/ACB Mapper
- ▶ DBD/PSB/ACB Compare
- ▶ DBD/PSB and ACB Reversal

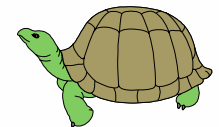
V8  
Support



V8  
Support

- IMS Advanced ACB Generator 5655-E05

- ▶ Replaces "Fast ACBGEN" tool and standard IMS ACBGEN utility
  - Much faster
  - Better reporting (eg. PSB and DBD size distributions)
- ▶ Includes ACBLIB Analysis Utility
  - Verify that all members are at the same IMS level
  - Verify that ACBLIB contains no PSB, no DBD, only ACB
  - Reports



■ **cont....**

***Include full support  
for HALDB***

# IMS Data Base Control Suite V2 5655-F76

- Intuitive ISPF Front-end integrates control of DB Administration activities
- Supports Full Function, HALDB, and Fast Path DBs
- Exploits IMS Base Utilities and/or IBM High Performance Tools
- IMS DB Control Suite for z/OS V2.2 highlights are:
  - ▶ Performance improvements during the GENJCL process
  - ▶ The Build process during which JCL skeletons for utilities are built is no longer required
  - ▶ A new Index Recovery function to be used with IMS Index Builder for z/OS
  - ▶ A new Image Copy Recovery function to be used with IMS Image Copy Extension
  - ▶ The ability to generate JCL to execute the IMS Database Image Copy 2 Utility (DFSUDMT0).
  - ▶ ISPF interface to IMS High Performance Change Accumulation Utility
  - ▶ A new user-friendly multifunctional DBRC user interface
  - ▶ A function which allows for migrating from V2R1 Table Library to V2R2 Table Library is provided.
  - ▶ Reduced work data set requirements which result in less storage management overhead



# Fast Path Basic Tools 5655-E30

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- DEDB Unload/Reload
  - ▶ DB AREA dynamically allocated
  - ▶ Full DBRC interface
  - ▶ Concurrent initialization and reload of Multiple DEDB Area Data Sets (MADS)
  - ▶ Includes support for SDEPs
  - ▶ Allows migration to/from HDAM
  - ▶ Provides an API for reading/writing unload data set
- DEDB Pointer Checker
  - ▶ On area dataset or IC
    - Includes support for Hardware Concurrent Copy (IMS V6)
  - ▶ DBRC interaction and Dynamic Allocation
  - ▶ SDEP space utilization analysis
- DEDB Tuning Aid
  - ▶ For predicting effects of a DB change
    - works as an extension of the pointer checker



# Fast Path Online Tools 5655-F78

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- DEDB Online Pointer Checker
  - ▶ Online interface to DEDB Pointer Checker and DEDB Tuning Aid
  - ▶ Runs in a Fast Path Utility dependent region
  - ▶ Produces report of pointer errors (choice of fast scan or in-depth analysis)
  - ▶ Optionally creates set of sequential files which are input to DEDB Pointer Checker (or DEDB Tuning Aid) for space usage analysis, etc
  - ▶ Optionally creates a Concurrent Image Copy
- DEDB Online Data Extract
  - ▶ Easy-to-use, flexible tool for extracting data for data reporting and populating test data bases
  - ▶ Uses locking to ensure data consistency
  - ▶ Extraction criteria allows one or more tests of segment data at multiple locations
    - can extract all or subset of each selected segment
- DEDB Online Area Extender
  - ▶ Enables increasing size of SDEP part, IOVF part, or both while Area is online

# IMS ETO Support Tool 5655-E12

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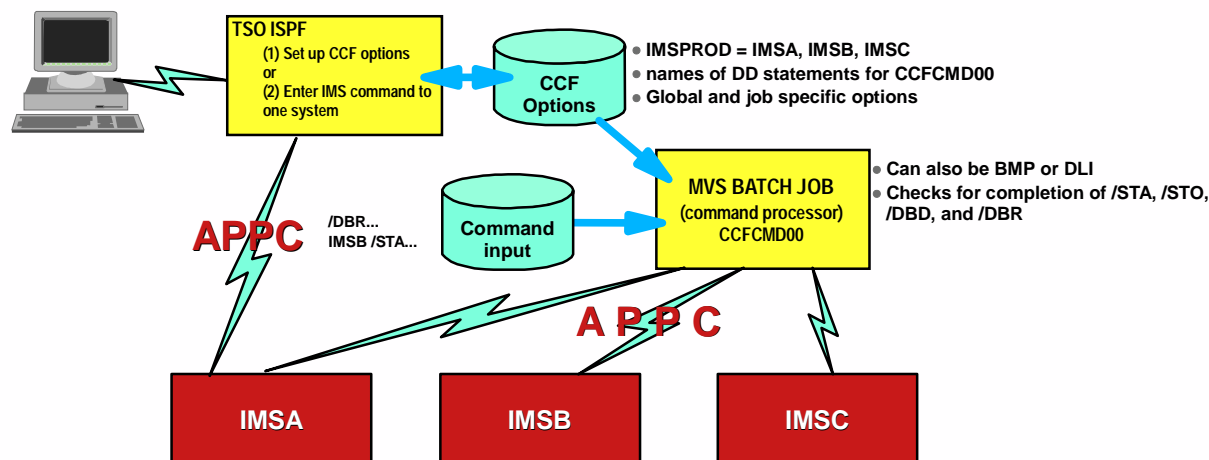
- The Extended Terminal Option (ETO) of IMS was designed to be easy to implement
  - ▶ But, users discovered application dependencies on terminal related names
- Consequently (and for other reasons) ETO implementation usually requires the use of various ETO Exits
  - ▶ must be written in assembler
- The ETO Support Tool allows you to define your ETO requirements in a DB which is read into in-memory tables
  - ▶ no exits need be coded
  - ▶ DB can be updated via batch or IMS transaction
  - ▶ tables can be dynamically refreshed
- Includes command/keyword security
  - ▶ checking by RACF (or equivalent)
  - ▶ or by ETO Support Tool itself

## ◆ Supported options include

- ▶ **Auto-sign-on**
- ▶ **Pre-ETO sign-on messages**
- ▶ **Userid suffixing for multiple signons by same user**
- ▶ **Cleanup of IMS Conversations at Sign-off**

# IMS Command Control Facility 5655-F40

- Issue commands for IMS TM or IMS DBCTL systems
  - ▶ via a batch utility or from a TSO session via ISPF
- Process IMS commands in all or selected systems of an IMSplex using the batch interface
- Ensure successful processing of database /START, /STOP, /DBR, and /DBD commands
- Synchronize Online Change and database commands across all regions in a Sysplex using the batch command processor
  - ▶ “canned procedures” provided for coordinating online change, and deleting messages on dead letter queue



A similar implementation is possible with DBCTL systems, except that CCF uses APPC to communicate with a BMP, which in turn issues ICMD and RCMD commands. However, it is not possible to check for completion of DB commands (using DFS0488I)

# IMS Batch Backout Manager 5697-H75

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- Automation of the batch backout process after application abends
  - ▶ Dynamically allocates an interim SLDS for Log close
  - ▶ Closes the interim batch SLDS
  - ▶ Dynamically allocates the new batch SLDS for backout
  - ▶ Performs the batch backout
- Additional functions:
  - ▶ Forces allocation of batch SLDS for jobs with no logs allocated (by specific or generic job name)
  - ▶ Forces DBRC=Y (or DBRC=N) for IMS batch systems not generated with DBRC=FORCE

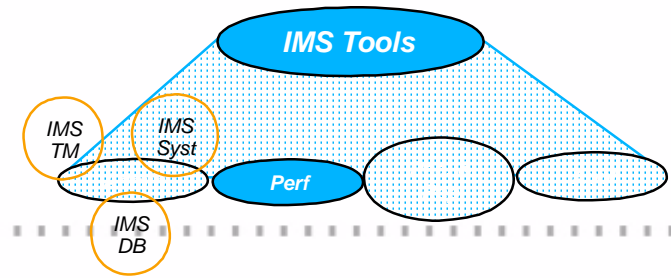


# Other DB Administration Tools

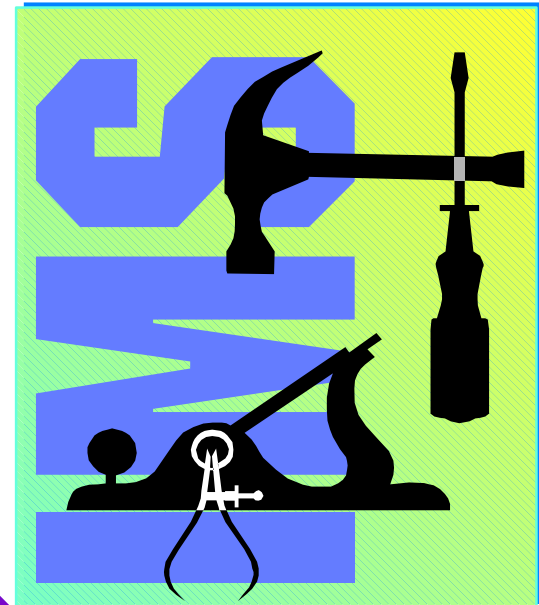
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- IMS Sequential Randomizer Generator 5655-E11
  - Analyzes DB keys and DB record lengths to produce a sequential randomizer for a DEDB or HDAM DB
  - Enables high performance access of DB with both direct and sequential processing
- IMS Hardware Data Compression - Extended 5655-E02
  - Enhances facilities available in IMS itself
  - Works on Image Copies, High Performance Unload files and IMS Unload files
  - Includes sample Compression Dictionaries
  - Enables effectiveness of existing dictionaries to be assessed
  - Allows monitoring of dictionary effectiveness over time
  - Builds DBD and Reload JCL

# IMS Tools for ...



## ***IMS Performance Management***



# IMS Performance Analyzer V3 5655-E15



- The standard for IMS Resource and performance management
  - ▶ IMS Log and IMS Monitor Analysis Tool
- Supports IMS TM, IMS DBCTL or IMS Batch
- Can use GDDM to graph extracted data or download it to a PC
- In addition, V3.2 provides
  - ▶ Improved Monitor Reporting
    - External Subsystem statistics incorporated into Region and Program reports
    - Alternative sequence of reports by Usage or Delay
    - Enqueue/Dequeue Trace Report enhanced to allow easier identification of conflict candidates
  - ▶ Enhanced Log reporting
    - New Transaction Trace Report to show all log records for selected transactions
    - Transaction Exception Report extended to include report sequencing on additional categories, Message Source, LTERM, VTAM Node, etc.
    - Extract capability extended to more reports
  - ▶ New Log and Monitor reports to "health check" your system
  - ▶ Enhanced DBCTL reporting
  - ▶ Documentation enhanced to include performance troubleshooting and tuning recommendations

**User specifies required reports and resources to be reported on, using ISPF**

# IMS Network Compression Facility

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- Replaces and enhances IMS Data Stream Tuner
  - ▶ Support for IMS V6 and IMS V7
- Functionalities
  - ▶ Compression of LU2 (3270) outbound data streams
    - Compression of all repeated characters
    - Elimination of non-display fields
  - ▶ IMS specific (not VTAM) solution
  - ▶ Improvement of the transaction response time to the user
  - ▶ Easy installation
  - ▶ No IMS or MFS changes needed
  - ▶ ISPF Facility
    - Display statistics and options
    - Update currently used options
    - Trace data streams

# IMS Queue Control Facility 5697-D69



- Supports both **DASD Queues** and **Shared Queues**
- Traditional Functions
  - ▶ IMS message queue recovery after a cold start
  - ▶ IMS application program recovery
  - ▶ IMS stress, regression and application testing
  - ▶ Port messages to other IMS systems
- Queue Management
  - ▶ "Very Long Message" Detection & Management
    - For Non-Shared Queues, QCF monitors processes that exceed user specified message queue usage and allows these processes to continue, be aborted or be WAITed to prevent exceeding the message queue limits
    - TSO/ISPF interface provides panels to look at and manage tasks (and their messages) that have been WAITed by QCF
  - ▶ General Queue Management (via ISPF or batch, for shared or non-shared queues)
    - look at queue status
    - list, view, copy or move messages off the IMS message queues (while IMS is active)
    - load messages onto the queues



# IMS Buffer Pool Analyzer 5697-H77

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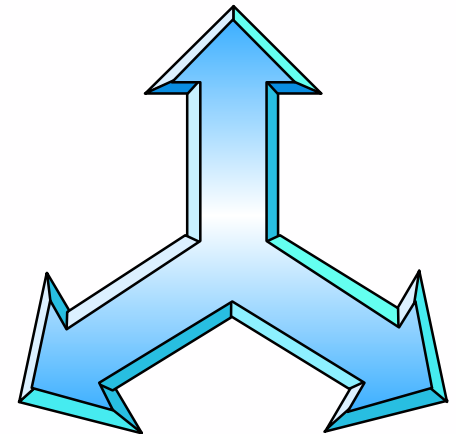
- Helps you tune your IMS Database Buffer Pools
  - ▶ Gathering component uses GTF for I/O info
  - ▶ Modeling component analyzes GTF data to provide statistical analysis of the impact of changes affecting buffer pools
    - Will additional buffers improve the performance of a given buffer pool ?
    - Will fewer buffers improve the performance of a given buffer pool ?
    - Model buffer pool usage to estimate I/O rates
    - Identifying databases which most heavily use each database sub pool
    - Performing "what if" scenario analysis

# IMS Workload Router V2.3 5697-B87

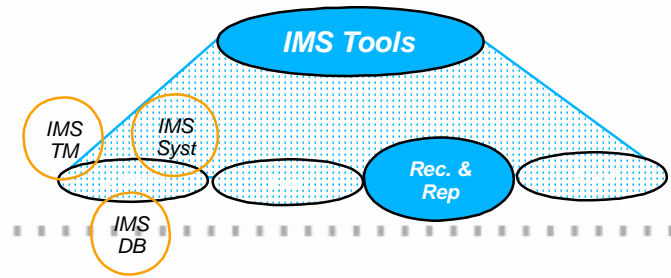
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- Non-Sysplex Environment
  - Exploit benefits of MSC for workload distribution
  - Allow transaction affinity routing
- Sysplex Environment
  - Balance transaction workload in Sysplex
  - Allow transaction affinity routing
  - Exploit IMS cloned resource environment
  - Connect two or more Parallel Sysplex
- V 2.3 enhancements
  - IMS Version 8 support
  - Support for greater than 100 links

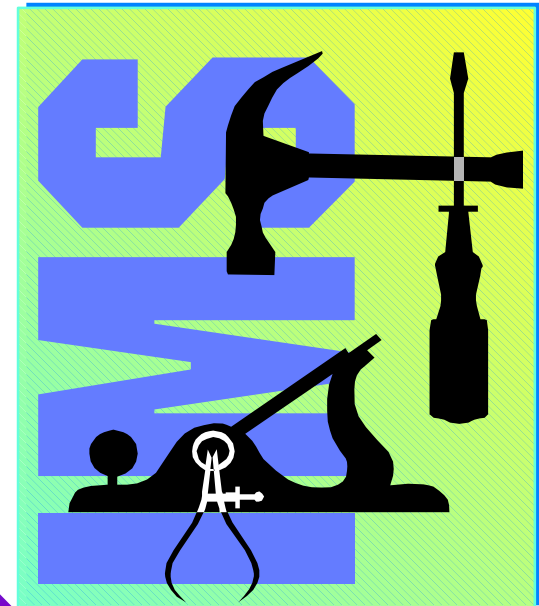
“Puts comprehensive resource information at your fingertips and helps you spot and resolve potential problems before they become critical”



IMS Tools for ...



# *IMS DB Recovery and Replication*





# IMS Recovery Related Tools

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- Basic IMS Recovery Related Utilities
  - ▶ IMS Image Copy Extensions
  - ▶ IMS DEDB Fast Recovery
- Enhanced Solutions
  - ▶ Application Recovery Tool for IMS and DB2
  - ▶ Online Recovery Service (ORS)
  - ▶ High Performance Change Accumulation



# IMS Image Copy Extensions 5655-J56



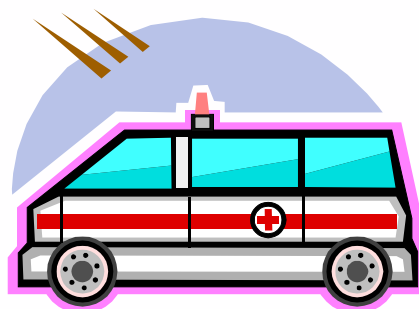
V8  
Support

- High Performance Batch or Concurrent Image Copy
  - ▶ Pointer checking during batch image copy or compressed image copy
    - Pointer Checking requires the use of the High Performance Pointer Checker tool
  - ▶ Stacking of multiple output datasets
  - ▶ Copying of DBRC DBDS and CAGRP Groups
- Can use Dynamic Allocation for all input and output datasets
  - ▶ one set of ICE JCL can be used for all image copies and recoveries
  - ▶ can be used with or in place of DBRC GENJCL facilities
- Enable image copy and hash check in a single step (for full function DBs or DEDBs) (UQ52882)
- New function 'Creation Image Copy' creates copies from:
  - ▶ IMS standard Image copy data set
  - ▶ Image Copy Extensions compressed image copy data set
  - ▶ IMS Online Image Copy data set
  - ▶ IMS Image Copy 2 data set
- Creates up to seven copies from the original data set at one time.

# IMS DEDB Fast Recovery 5655-E32

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- Avoids full DEDB AREA recoveries during enforced cold start
  - Closes the IMS Online Log
  - Recovers all DEDBs (using the log)
  - Produces status listing of the necessary subsequent system recovery activities
- Ver 2.2 Now supports multiple IMS releases from a single Load Library
- Ver 2.2 Supports IMS Version 8



# Application Recovery Tool for IMS and DB2 5697-F56

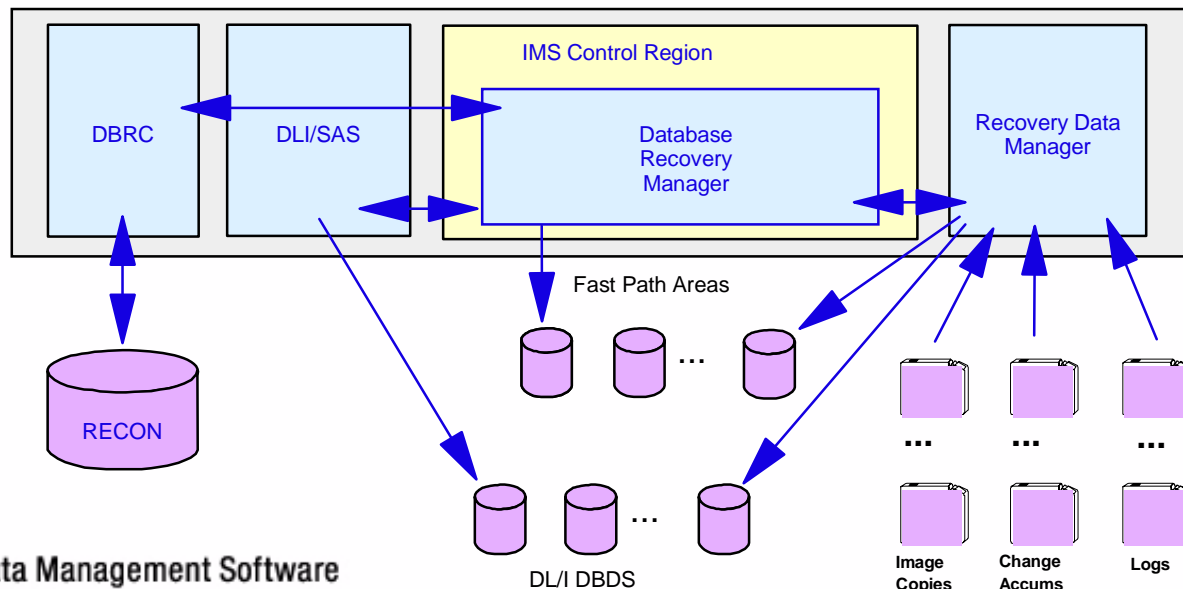
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- Primary function is to generate and run all the jobs necessary to recover a set of IMS and/or DB2 databases to a common point of consistency
  - complements IMS Recovery Saver in this respect
  - ▶ Provides a function for creating point of consistency across IMS and DB2
    - called a “Virtual Image Copy”
    - Interacts with online IMS and WAITs for BMPs to complete if updating any DB in set, issues /DBDs and checks for completion, Optional OLDS switch and /STA DBs
  - ▶ Also provides facilities for registering or changing DBRC DB information, taking image copies, performing change accumulation, tidying and reorganizing RECONS
- Enhancements for IMS Applications
  - ▶ Support for HALDB in IMS V7
    - IMS Version 8 support will be added via PTF
  - ▶ Support for IMS SYSPLEX data sharing
- Enhancements for DB2 Applications
  - ▶ Index copies and objects with the DEFINE NO option supported
  - ▶ Parameter list IX has been added to the DRMFIC and DRMRECOV functions

# Online Recovery Service (ORS) 5655-E50



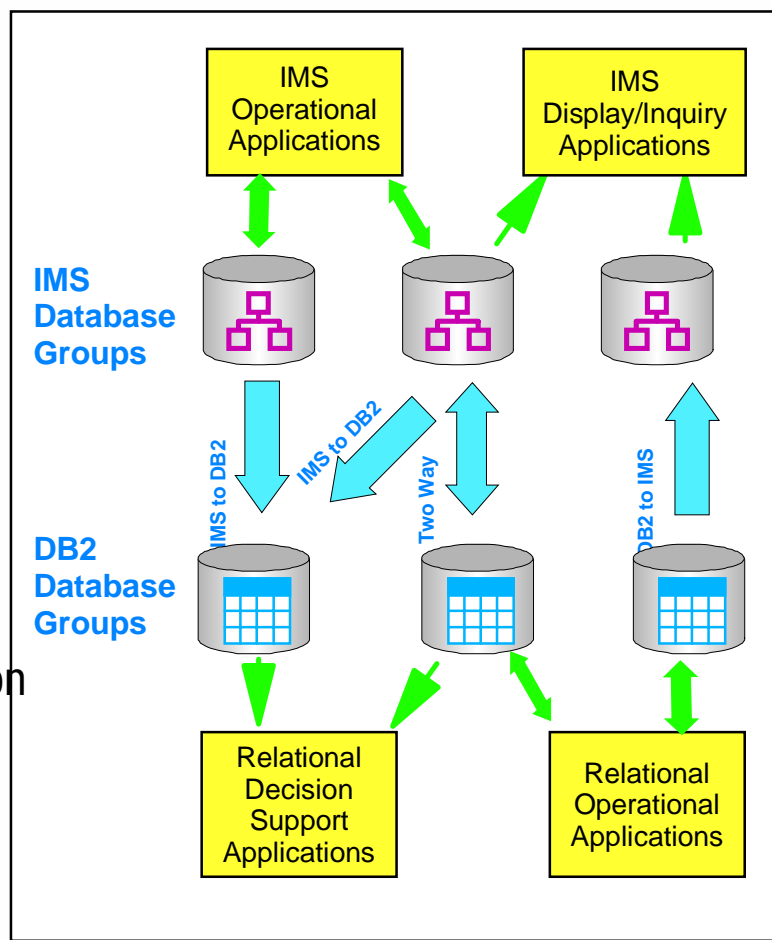
- Online Commands used to
  - ▶ Build list of DBs/AREAs to be recovered
  - ▶ Start recovery for a list
- Online IMS is used to recover IMS database data sets
  - ▶ Input data sets read in parallel
  - ▶ DB data sets recovered in parallel
  - ▶ Change accumulation input is optional -- even for a datasharing environment
  - ▶ Time stamp recovery to any time is supported
    - All committed updates prior to this time are recovered. Later updates are discarded.



# IMS DataPropagator V3 5655-E52

**V8  
Support**

- Customer Needs
  - ▶ Decision Support
    - User access to stable data
    - Propagate only the data of interest
    - Exploit relational technology for query
  - ▶ Application coexistence
    - Two masters
    - Data in both systems synchronized
  - ▶ Application Migration
- Functionalities
  - ▶ IMS / DB2 MQSeries-based Data Propagation
    - Near Real-Time Asynchronous Propagation
      - Capture Component
      - Apply Component
      - Event Marker Facility
  - ▶ IMS Log based Asynchronous Propagation
  - ▶ IMS / DB2 Synchronous Propagation
  - ▶ DB2 / IMS Synchronous Propagation



**No Change to Existing Applications**

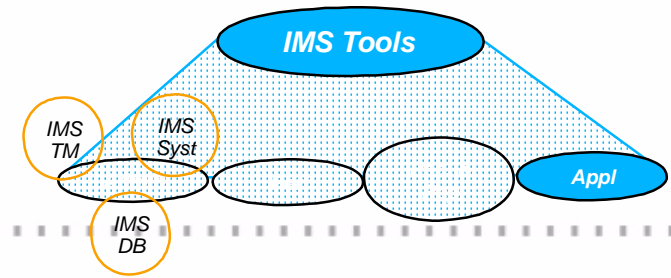
# IMS HP Change Accumulation 5655-F59

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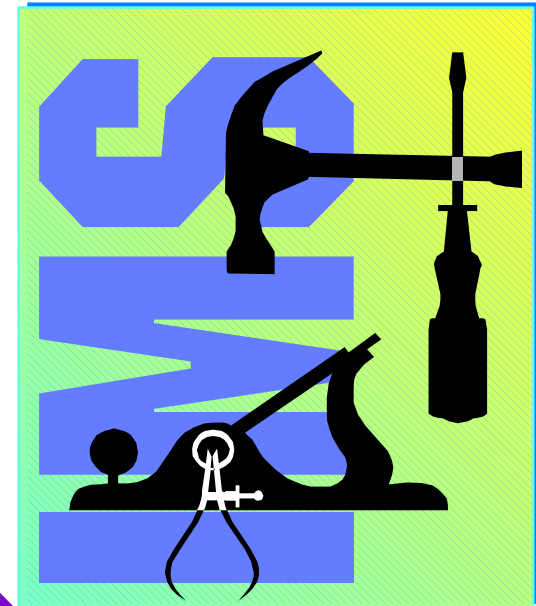
- Replaces the IMS Change Accumulation utility
  - ▶ Parallel execution of multiple IMS CA jobs in a single Job.
  - ▶ Parallel streaming of both input and output data
    - Input data from RLDS's
    - Output data to new CA's datasets
  - ▶ Single pass of input/output
  - ▶ Supports IMS V6 and V7
- ISPF and Batch Interface
  - ▶ Automatic submission

*IMS HP CA provides an environment in which multiple CA jobs can be run in parallel, instead of in sequence.*

IMS Tools for ...



## *IMS Application Management*





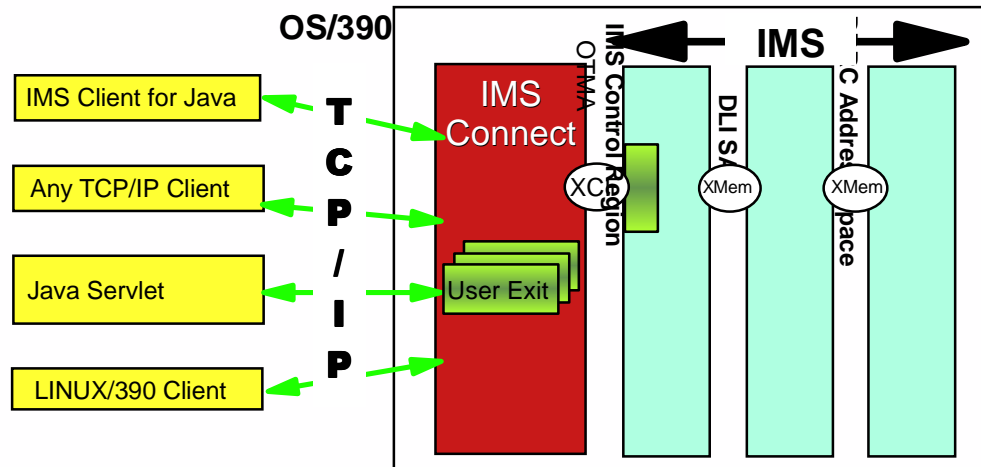
# IMS Connect 5655-E51



- IMS Connect Address Space is the interface between TCP/IP and IMS transaction Manager
  - ▶ Replaces and enhances the IMS TOC
- IMS Connect can connect (via XCF) to any IMS systems in the sysplex
- Supports access to IMS by LINUX/390 applications
- The IMS Connector for Java (supplied with VisualAge for Java) enables Java Servlets or Server Pages (running in WebSphere Application Server) to access IMS transactions via IMS Connect

⊕ **IMS Connect has been benchmarked by IBM at 3,400 transactions per second (steady state; 4,000+ tps peak)**

- ★ with single IMS and single IMS Connect address space
- ★ 39% CPU



# IMS Program Restart Facility 5655-E14

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- Enhances IMS Application Extended Checkpoint/Restart facilities
  - ▶ For stand-alone batch and BMP
- Enables restart
  - ▶ on any system in sysplex
  - ▶ without changes to JCL
- Implementation of PRF requires no JCL changes
- Can be used to restart programs that do not abend but which end with a non-zero return code
- Can supply global parameters to all batch/BMP jobs (ie. without JCL changes)
  - eg. LOCKMAX=, DBRC=
- Is especially useful in a datasharing environment to provide JCL parameters
  - IRLM=, IRLMNM=
  - IMSGROUP=groupname + list of IMS ids in group
- Can be used to reduce overhead of applications that are taking too frequent checkpoints



# IMS Message Format Services Reversal Utilities

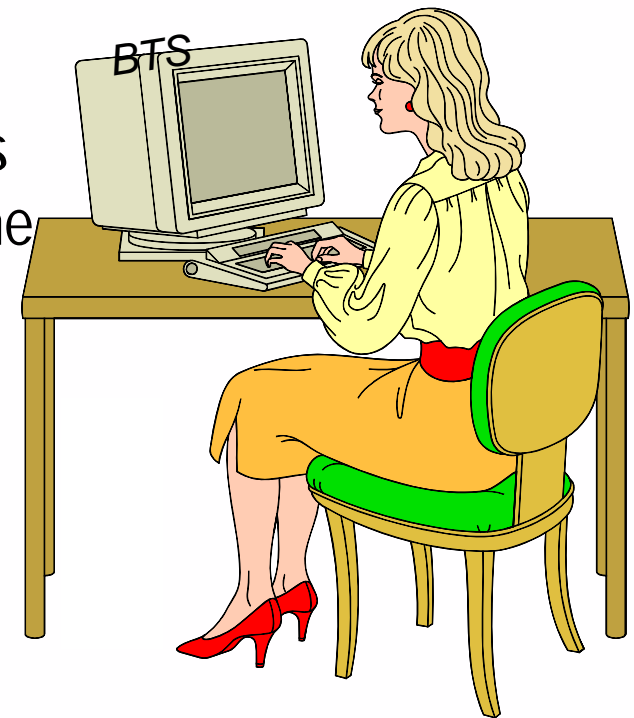
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- IMS Message Format Services (MFS) Utilities consists of two utilities
  - ▶ MFS Reversal
    - Convert MFS MID/MOD/DIF/DOF control blocks back into IMS MFS utility control statements
    - It also provides useful summary reports of the IMS FORMAT library, including the relationships among members
  - ▶ MFS Compare
    - The MFS Compare is designed to compare two sets of MFS *source* libraries to quickly highlight differences between them



# Batch Terminal Simulator (BTS) V3.1 5655-J57

- V3.1 provides new functions and features
  - ▶ BTS Audit report program provides two functions
    - Generates the BTSIN control statement with the corresponding MFS associated with the MODNAME from IMS transaction log records ('01'X, '03'X)
    - Prints containing screen images of transactions including data, USER/LTERM identification, time stamp by extracting from BTSOUT
  - ▶ Supports JAVA language application under JBP region
  - ▶ Supports DB2 and WebSphere MQ call trace
  - ▶ Supports LU6.2/APPC
  - ▶ Supports /EXIT under LE/370
  - ▶ Supports Multiversion IMS from single BTS loadlib



# IMS Tools Product Plans - Beyond 2002

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- Products 2003
  - ▶ IMS Online Reorganization Facility (new)
  - ▶ IMS Performance Monitor (new)
  - ▶ IMS Library Integrity Utilities (new)
  - ▶ IMS Data Propagator V4
  - ▶ IMS HP Pointer Checker V1.2
  - ▶ IMS Parallel Reorg V2.2
  - ▶ IMS Online Reorganization Facility R2
  - ▶ IMS Queue Control Facility V2
  - ▶ IMS Recovery Facility
  
- 2003 - Other Activities
  - ▶ IMS Version 9 QPP Support - all products
  - ▶ Look for more new function delivered as PTFs
  
- Products 2004
  - ▶ IMS Performance Monitor R2 (enhancements)

# Product Plans - Beyond 2002

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- IMS Online Reorganization Facility
  - ▶ BMP operation
  - ▶ Reorganization to copy
  - ▶ Auto Image Copy
  - ▶ Short outage to swap DBs
- IMS Performance Monitor
  - ▶ ISPF Front-end
  - ▶ Basic monitoring data (will add more later)
  - ▶ GUI front-end (possibly)
- IMS Library Integrity Utilities
  - ▶ Includes all features and function of Library Management Utilities
  - ▶ Includes integrity checker function
  - ▶ Provides consistency checking function
- IMS Data Propagator V4
  - ▶ GUI Front-end
  - ▶ MQSeries asynchronous IMS to IMS replication
  - ▶ IMS data extract support

# Product Plans - Beyond 2002

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- IMS HP Pointer Checker V1.2
  - ▶ Smaller records and other perf enhancements
  - ▶ Automatic Optimization of read buffer sizes
  - ▶ Work file buffer optimization and VSCR
  - ▶ Direct check - no merge
  - ▶ Use Acblib
- IMS Parallel Reorg V2.2
  - ▶ Integrated Image Copy
- IMS Online Reorganization Facility V1.2
  - ▶ HISAM support
- IMS Queue Control Facility
  - ▶ Extended function

# Product Plans - Beyond 2002

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- IMS Recovery Facility
  - ▶ Extends ORS
  - ▶ Batch and Online operation
  - ▶ Integrated Image Copy
  - ▶ Recovery Tape Pull list
  - ▶ Find possible recovery points - quiet times
  - ▶ Disaster Recovery
  - ▶ IDCAMS Del/Def
  - ▶ Test Environment data create
  - ▶ Integrated Index Builder in Recovery



# IBM IMS Tools for IMS Version 8.1

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- 5655-A14 Batch Terminal Simulator V2 + UQ62360
- 5655-E02 Hardware Data Compression Ext V2.2 + UQ59607
- 5655-E03 DB Repair Facility
- 5655-E04 Library Management Utilities + UQ61449
- 5655-E05 Advanced ACB Generator + UQ63355
- 5655-E06 High Performance Unload + UQ63489
- 5655-E07 High Performance Load + UQ63485
- 5655-E09 High Performance Ptr Checker + UQ63507
- 5655-E10 Image Copy Extension + UQ66270
- 5655-E11 IMS Sequential Randomizer Gen.
- 5655-E12 IMS ETO Support V2.2 + UQ65127
- 5655-E14 Program Restart Facility + UQ66680
- 5655-E15 IMS Performance Analyzer V3.1 + UQ62098
- 5655-E24 IMS Index Builder V2R1 + UQ65633
- 5655-E24 IMS Index Builder V2R2

## IBM IMS Tools for IMS Version 8.1 (cont)

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- 5655-E30 Fast Path Basic Tools V1 R2 + UQ63492
- 5655-E41 Network Compression Facility + UQ64522
- 5655-E50 Online Recovery Service + UQ63821
- 5655-E51 IMS Connect V1 R1
- 5655-E51 IMS Connect V1 R2
- 5655-E52 IMS Data Propagator V3 R1 + UQ64207
- 5655-F40 Command Control Facility + UQ64521
- 5655-F43 HP Sysgen Tools + UQ64518
- 5655-F45 MFS Reversal
- 5655-F59 HP Change Accumulation + UQ66240
- 5655-F74 IMS Parallel Reorganization + UQ68770
- 5655-F76 DB Control Suite V2 R1 + UQ64974
- 5655-F78 IMS Fast Path Online Tools V2 R1 + UQ68420
- 5655-I01 HALDB Conversion Tool
- 5655-I15 High Performance Prefix Resolution V2 R1

## IBM IMS Tools for IMS Version 8.1 (cont)

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- 5697-E99 IMS Queue Control Facility V1R1 + UQ60536
- 5697-E99 IMS Queue Control Facility V1 R2
- 5697-H75 IMS Batch Backout Manager
- 5655-J57 IMS Batch Terminal Simulator V3 R1
- 5697-H77 IMS Buffer Pool Analyzer
- 5655-F76 IMS Database Control Suite V2 R2
- 5655-E32 IMS DEDB Fast Recovery V2 R2
- 5655-J56 IMS Image Copy Extensions V2 R1
- 5655-E24 IMS Index Builder V2 R3
- 5655-E15 IMS Performance Analyzer V3 R2
- 5697-B87 IMS WorkLoad Router V2 R3

# Summary

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- **IBM IS IN THE TOOLS BUSINESS**
- We have made significant investments in these products
- We have been delivering new products and features in short order
- We remain flexible and responsive to customer needs
- We have a long term commitment to IMS and IMS tools

# Summary

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- **Where to find additional IBM Data Management Tools Information**
  - ▶ **Announcements**
    - <http://www-3.ibm.com/software/data/db2imstools/announce.html>
  - ▶ **List of IBM Data Management Tools**
    - <http://www-3.ibm.com/software/data/db2imstools/>
  - ▶ **NEW News**
    - <http://www-3.ibm.com/software/data/db2imstools/news.html>
  - ▶ **E-Mail**
    - [ecrohde@us.ibm.com](mailto:ecrohde@us.ibm.com)