

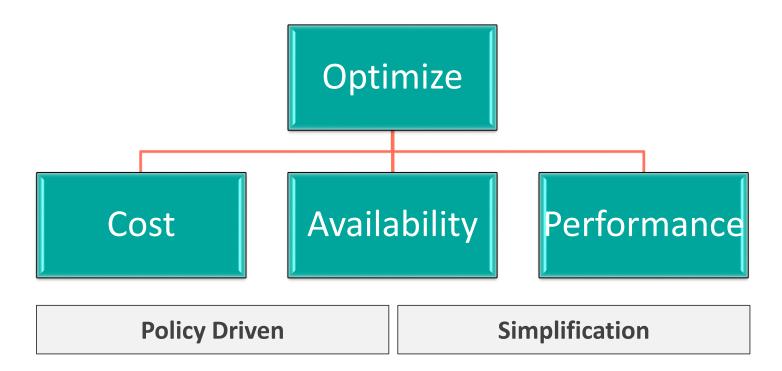
BMC Solutions for IMS News from BMC

David Schipper

Lead Product Manager david_schipper@bmc.com

March 2016

IMS Strategy Foundation



Optimize – Lower Cost

Specialty Processors

Subsystem Placement

Application Optimization

Optimize – Maximize Availability

Outage free Reorgs/IC

Dynamic Defrag

Workload Avoidance

Optimize – Maximize Performance

64-bit addressing

Faster I/O technology

Hardware changes

December IMS Tools Releases

GA December 4

General

Merge features/functions from our IMS product offerings

- Merge selected capabilities from Neon products into go forward heritage BMC products
- Neon control card compatibility coming for selected products
- Utility Migration JCL Generator creates the JCL to run the basic functions of most heritage BMC utilities

Support IMS 14 across all products and areas

MAXM Database Advisor and Console Enhancements – December 2015

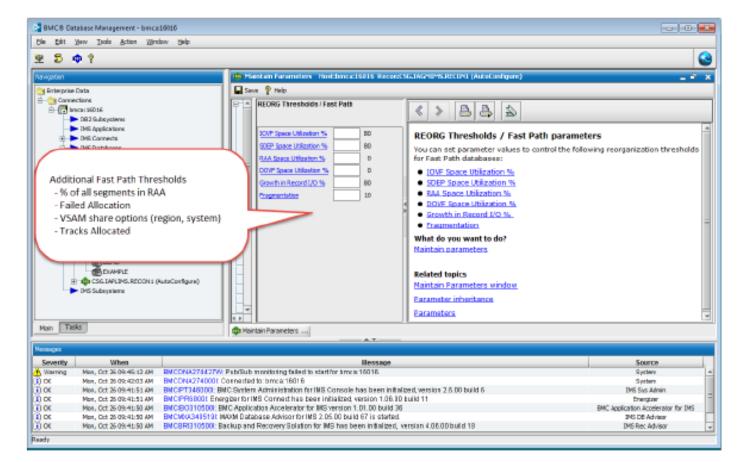
Console Enhancements

- Perspectives display data in a way best suited for the feature
- Hide perspectives for features you do not use
- Each perspective reflects its own set of connections
- Optional Transport Layer Security (TLS) 1.0 support

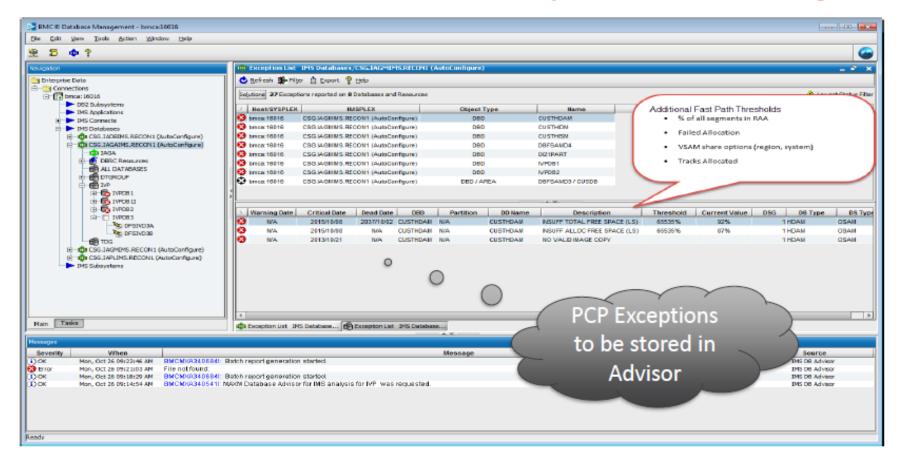
When an exception is detected, schedule a REXX EXEC to execute at a specified day and time

Additional thresholds in MAXM Database Advisor

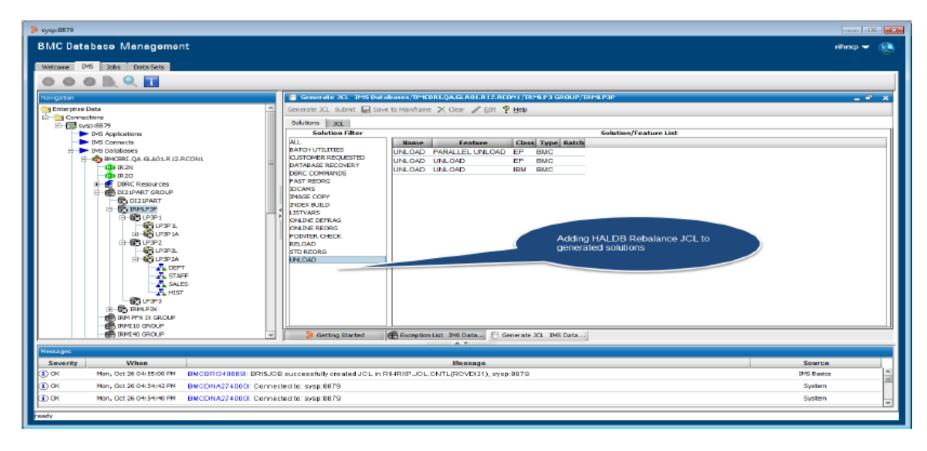
New MAXM Database Advisor Thresholds



MAXM Database Advisor Exception List Changes



MAXM Database Advisor – Rebalance JCL



MAXM Reorg Enhancements – December 2015

Dynamically allocate unload files for partitioned databases when unloading partitions into separate files

Reduce Full Function online reorg outage time

Rename of temp datasets now performed after database is placed online
 New Max Extents keyword on Load/Reorg to limit number of extents allowed
 Zero outage batch image copy of output datasets using new COPY function
 Generate an unload file that contains actual unload segments for virtual logical children (VLCs)

Check for Paused Databases Utility identifies databases quiesced by a BMCPAU command

OSAM HALDB 8GIG support

MAXM Reorg Enhancements – December 2015

Disassembly Utility disassembles BMC utility parameter load modules Database Clone Function

- Supports Group command
- Supports HALDB, Full Function and PDF databases
- Automatically includes secondary indexes

Segment Restructure generic user exit for UNLOAD/LOAD

- Delete segments based on field values
- Move fields within a segment
- Insert literal values anywhere in a segment (types C, X, H, F, D, and B)
- Convert the data type

Provide a OLDDBD and NEWDBD and let us generate the exit Use high level control statements

- For Delete DELDEP | DELALL(offset, condition, value)
- For Insert FIELDS(destinationOffset:type'literalValue')
- Moving fields FIELDS(destinationOffset:sourceOffset,length)
- Converting data CONVERT (outputType, sourceType)

Old DBD

DBD NAME=HDD,ACCESS=(HDAM,OSAM),RMNAME=(DFSHDC40,, 600) DATASET DD1=HDD01,DEVICE=3350,SIZE=4096,SCAN=003 SEGM NAME=CB01AJP,BYTES=130,PTR=(H),PARENT=0 FIELD NAME=(AJPKEY,SEQ,U),BYTES=13,START=1,TYPE=C FIELD NAME=NOMAD1,BYTES=8,START=16,TYPE=C FIELD NAME=NOMAD2,BYTES=8,START=24,TYPE=C FIELD NAME=NOMAD3,BYTES=8,START=32,TYPE=C FIELD NAME=FGROWP,BYTES=8,START=40,TYPE=P FIELD NAME=FSHRNKP,BYTES=8,START=48,TYPE=P FIELD NAME=FGROWC,BYTES=8,START=56,TYPE=C FIELD NAME=FSHRNKC,BYTES=8,START=64,TYPE=C FIELD NAME=FC2P,BYTES=8,START=72,TYPE=C

New DBD

DBD NAME=HDD,ACCESS=(HDAM,OSAM),RMNAME=(DFSHDC40,, 600) DATASET DD1=HDD01,DEVICE=3350,SIZE=4096,SCAN=003 SEGM NAME=CB01AJP,BYTES=130,PTR=(H),PARENT=0 FIELD NAME=(AJPKEY,SEQ,U),BYTES=13,START=1,TYPE=C FIELD NAME=FC2P,BYTES=8,START=16,TYPE=P FIELD NAME=FSHRNKC,BYTES=5,START=24,TYPE=C FIELD NAME=FGROWC,BYTES=11,START=32,TYPE=C FIELD NAME=FSHRNKP,BYTES=3,START=40,TYPE=P FIELD NAME=FGROWP,BYTES=12,START=48,TYPE=P FIELD NAME=NOMAD3,BYTES=8,START=56,TYPE=C FIELD NAME=NOMAD2, BYTES=8, START=64, TYPE=C FIELD NAME=NOMAD1,BYTES=8,START=72,TYPE=C

Generated exit

Con't

Į	UX1 A UX1 R L L L L L I S	STM LR LM LTR JZ JSING LARL LARL IC JVC TR SR IC		R2=SEGMENT,R3=INPUT,R4=OUTPUT HAVE OUTPUT BUFFER? NO. TERM CALL TOO SMALL TOO BIG TEMPORARY SAVE SEGMENT CODE TRANSLATE FOR DECISION TABLE TRANSLATED SEGCODE RESTORE	SEGTAA SEGTAB SEGTZZ ST01	SLL LARL AR CR JNH CR JNL L BR DC EQU DC CC JH CLC JL	1,2 2,5EGTAB 2,1 2,14 CCO 2,15 CCO 1,0(,2) 1 A(0) * A(CCO) A(STO1) * OH =C'000000000',15(3) CC24 =C'99999999',15(3) CC24	OFFSET INTO DECISION TABLE START OF DECISION TABLE DECISION TOO SMALL? YES, IGNORE TOO BIG? YES, IGNORE? SEGMENT PROCESSOR ROUTINE PROCESS SEGMENT DECISION TABLE ->IGNORE SEGCODE:1
---	---------------------------	--	--	--	------------------------------------	---	--	---

Generated exit- Restructure

```
SEGMENT:CB01AJP
 COPY THE INPUT SEGMENT
        MVC 0(130,4),0(3)
 RELOCATE FIELD FC2P
* CONVERT FROM TYPE CHAR TO PACKED
        PACK 15(8,4),71(8,3)
 RELOCATE FIELD FSHRNKC
 LENGTH DECREASED
        MVC 23(5,4),63(3)
 RELOCATE FIELD FGROWC
        MVC 39(3,4),=C'
 RELOCATE FIELD FSHRNKP
 LENGTH DECREASED
        MVC 31(3,4),52(3)
```

Con't

```
RELOCATE FIELD FGROWP
LENGTH INCREASED
      MVC 47(4,4),=X'00000000'
      MVC 51(8,4),39(3)
RELOCATE FIELD NOMAD3
      MVC 55(8,4),31(3)
RELOCATE FIELD NOMAD2
      MVC 63(8,4),23(3)
RELOCATE FIELD NOMAD1
      MVC 71(8,4),15(3)
```

Con't

```
* FIELDS CLAUSE....1:100,10
         MVC 0(10,4),100(3)
               CC4
CC4
               15,4
               EXIT
               15,12
CC12
               EXIT
               15,24
CC24
               EXIT
CC0
               15,15
EXIT
               13,4(13)
               14,12(,13)
               0.12.20(13)
         EJECT
         LTORG
```

Con't

```
SEGXREF
 EQU
 DC
   DC
   DC
 DC
   DC
   DC
   DC
   DC
   DC
 DC
   DC
   DC
 DC
   DC
   DC
   DC
   C'0123456789ABCDEF'
 DC
X2CT
 EQU
   *-256
SEGNAME
 DSECT
NAME
 DS.
   CL8
   CL1
CODE
 DS
 END
```

MAXM Reorg Enhancements – December 2015

- Performance improvement with 64 bit buffering and sort enhancements
- Neon HALO functionality moved to MAXM Reorg/Online
 - Increase/decrease segment length
 - Add/delete dataset groups
 - Add/delete secondary indexes
 - Add segments with existing parentage
 - Restructure segment data
 - Convert between access methods (OSAM/VSAM)
 - Clone databases
 - Convert to HALDB/PDF

MAXM Reorg Enhancements – December 2015

Neon Extract product integration

- Create test data
 - Select Every 1,000th Record
 - Omit this segment type
 - Only select 20,000 occurrences
- Purge data
 - Drop segments older than xxxx
 - Write them to an UNLOAD file and reload the database
- Extract files
 - HDUNLOAD or User Defined format
 - Data can be masked with the TRANSFORM variable

Fast Path Products Version 4.00 Enhancements – December 2015

Support for the "DMAC area is Empty" flag Fast Path Online REORG/EP

- Can use private area buffer pool
- Supports database buffers "above the bar"
- Issues in EXTEND IOVF with SDEP segments present resolved

Fast Path Online Restructure/EP

- PREPARE command determines a list of specific ACB members that will be affected by the restructure of the specified DEDB
- Post processing copies those ACBs from the staging library into the active production library
- Miscellaneous report enhancements

IMS TM Products Enhancements – December 2015

DELTA

- Supports getting database and application information from an IMS catalog/directory instead of ACBLIB
 - IMS catalog resources copied into a DELTA PLUS List must be RELOAD elements
- Delta IMS batch jobs (DLA#BCP1/DLA#BCP2) have been modified to allow
 - DELETE, STOP and START of Resources
- Provides a new DELTA Repository
 - Alternative to MODBLKS generation
 - Stores Database directory (DDIR), Program directory (PDIR), Scheduler message block (SMB), and Routing code table entry (RCTE) information
 - If not using the DELTA repository, the DELTA log stores these definitions

Extended Terminal Assist supports Passphrases and TCP/IP ISC descriptors

IMS TM Products Enhancements – December 2015

Energizer for IMS Connect v1.7.00

- Password phrases and other recent enhancements to IMS Connect messages
- IRM Timer Override function
- PORT statistics
- Switching between static (round-robin) and dynamic journal modes without restarting IMS Connect

Log Analyzer for IMS v1.5.00

- LUOW provides reporting and correlation between IMS Log Records and Energizer for IMS Connect Journal records for ODBM data
- Audit report includes x'5F' Log Records
- User interface includes Database Update records (including segments) and log record sequence numbers

IMS TM Products Enhancements – December 2015

Message Advisor for IMS v1.7.00

- Provides notification for messages requeued from Message Advisor
 ISPF session even if session is no longer active
 - WTO Message BMC43254 documents how many messages were requeued
 - Message Advisor Server Option must be turned on
- Queue Protection Facility now accepts upper OTMA limit of 65000

Application Restart Control Enhancements – December 2015

IMS 14 Support

Unit-of-work boundary support

- Automatically request checkpoint services by using file-specific data to specify unit-of-work boundaries
- Define a unit of work based on your user-specified fields
- Request a checkpoint each time the data within the specified field changes

Support for redirecting batch jobs via BMC Subsystem Optimizer

Application Accelerator for IMS Enhancements – December 2015

IMS 14 Support

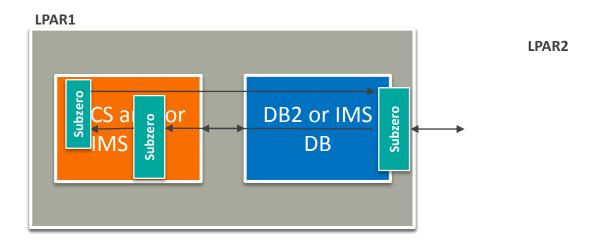
Uses updated console

IBM Program Restart Facility support

New IMS resource savings reports

- Batch version of the information on the console's Resource Savings window
- Resource Savings Report shows the accumulated savings for the current profile of each job step
- Job Step History Report shows the savings for each execution of each job step

BMC Subzero basics



- 1. Application SQL or DL/I calls are intercepted by Subzero
- 2. Subzero routes the data access request to the appropriate DBMS
- 3. DB2/IMS DB processes the data request and returns the requested data
- 4. Subzero routes the result set back to the initiating application

BMC Subsystem Optimizer 2.0 – GA September

Installation Verification Program (IVP) – added to 1.0 with PTFs Supports IMS 14

Supports for CICS 5.3

Adds IMS Transaction Manager (IMS TM) separation from DB2

- Augments CICS support by adding the other major transaction manager
- Functions like CICS to DB2 support by routing the IMS transaction's database call to DB2 on another LPAR

Provides CICS separation from DB2 when using MQ Shared Queues

Subsystem Optimizer New Features/Plans

Support separation of batch programs from the DB2 and/or IMS database they access

- Will be added to the 2.0 version via SPEs
- DB2 Batch support GA in December
- IMS Batch support is planned for 2016
 - Planned dates may change

BMC MainView for IMS Enhancements – December 2015

IMS 14 support

Subzero infrastructure support

Include OTMA header data in trace filters

Show elapsed time for MQ transactions

Suggest IMS preload programs*

Deep Trace Capabilities*

^{*}Simplified packaging only

Are you preloading the right programs?

290CT2014 13:08:40																					
PGM	1 Preload	Colle	ction:	ON																	
Īd	Program Name APPL000	Type	Name		Pgm Scheds 1	Tran Scheds 1	/Sched 1.00	DLÍ Tme 7990.0		ESS S	ier Li √a	imit Li⊓ n⁄a ⊣	mit∣ n⁄a	DLI Tme 7990	DLI Tme 7990	CPU 2133	Max CPU 2133	DLI Time 7990.00		Name I14GMP6	IMS MV ID Na I14G SJ
1	APPL000	B MPP	APPL007B APPL008B		1 1 1	1 1 1	1.00 1.00 1.00	7990.0 14378.0 14378.0	1945.0	n∕a n	√a .	50 659 n/a 1 60 659	n∕a	7990 14378 14378	7990 14378 14378	2133 1945 1945	2133 1945 1945	7990.00 14378.00 14378.00	1945.00	I14GMP6 I14GMP6 I14GMP6	I14G SJ I14G SJ I14G SJ
2	APPL000	7 MPP	APPL0007 APPL007A		2 1	2 1 1		10113.0 15716.0 4510.0	1958.0 2289.0 1627.0	No N	lo	n/a 1 100 65 200 65		4510 15716 4510	15716 15716 4510	1627 2289 1627	2289 2289 1627	20226.00 15716.00 4510.00	2289.00	I14GMP5 I14GMP5 I14GMP5	I14G SJ I14G SJ I14G SJ
2	APPL000	9 MPP	APPL0009	1	2 1	2	1.00 1.00	4554.0 3055.0	577.5 464.0	n∕a n No N	i∕a lo	n/a 40 65	n∕a 535	3055 3055	6053 3055	464 464	691 464	9108.00 3055.00	1155.00 464.00	I14GMP5 I14GMP5	I14G SJ I14G SJ
2	DFSIVP1	MPP	APPL009A IVTNO	5 1	789 789	832 832	1.00 1.05 1.05	6053.0 4935.4 4935.4	691.0 585.3 585.3	n∕a n	i∕a .	200 659 n/a 1 5 659	n∕a	6053 2301 2301	6053 41904 41904	691 261 261	691 6019 6019	6053.00 3894059.00 3894059.00			I14G SJ I14G SJ I14G SJ
	PDFSIVP2 PIVP1H	MPP MPP	IVTNV	1	743 743 416	819 819 416	1.10 1.10 1.00	5471.1 5471.1 5345.9	539.2 539.2 474.4	No N	lo 65	5535 65	n∕a 535 n∕a	2189 2189 2249	53170 53170 59670	238 238 228	4032	4065003.00	400651.00 400651.00 197366.00	I14GMP5	I14G SJ I14G SJ I14G SJ
	. 177 177	1111	IMFT1H	1	416	416	1.00	5345.9	474.4			5535 65		2249	59670	228			197366.00		I14G SJ

Help to identify which programs should be preloaded reducing the CPU needed at transaction execution time.

Find Misbehaving BMP Quickly

- You can see the long DL/I DB call
- Easy to set up filters
- No longer have to read the detail trace

```
030CT2014 11:22:28 ----- MAINVIEW WINDOW INTERFACE (V6.1.00)
COMMAND ===>
                                                                 SCROLL ===> CSI
CURR WIN ===> 1
                        ALT WIN ===>
>W1 =ITADTRAC========I13YGBG==*======030CT2014==11:22:28====MVIMS====D===17
                                Transaction Trace
  Trace ID.
                      Seg#/Rgn. 1
                                       Tran. THISMINQ
                                                          Usr/LTERM WTOR
 WAITS.... YES
                      IO Events YES
                                        SSA.. NO
                                                          KFB..... NO
  IOA Lines 000
                      Arrived., 16:41:07.588952
                                                          Started. . 16:41:07.81278
                        ΑT
                               Elapsed
                                            CPU
                                                   Details
Event
          Resource
          WTOR
                     67.003us
                                               4us ok
          CUSTHISM
     \mathsf{DB}
                     67,023us
                                  709ms
                                             385us GE
                     67,055us
OPEN DB
          CUSTHISM
                                  704ms
                         570ms
  IO DD
          CUSTHISM
                                  203us
                                                    VSAM OPEN I/O
                         570ms
  TO DD
          CUSTHISM
                                   190us
                                                    VSAM OPEN I/O
  IO DD
          CUSTHISM
                         570ms
                                1.978us
          CUSTHISM
  IO DD
                         707ms
                                   148us
                                                   VSAM OPEN I/O
  IO DD
          CUSTHISM
                         707ms
                                  505us
                                                   VSAM OPEN I/O
  תת חד
          CHSTHISM
                         708ms
                                  217us
                                                    VSAM OPEN I/O
                         708ms 10,032us
  WT DBR
                                                    DBRC IWAIT
  חת חד
          CUSTUSAM
                         //Ums
                                  1/3us
                                                   VSAM UPEN 17U
  IO DD
          CUSTOSAM
                         770ms
                                   161us
                                                    VSAM OPEN I/O
  IO DD
                         771ms
                                  444us
          CUSTOSAM
                                                   VSAM OPEN I/O
  IO DD
          CUSTHISM
                         775ms
                                  312us
                                                   VSAM I/O
          CUSTHISM
  IO DD
                                   198us
                                                   VSAM I/O
                         776ms
ISRT DC
          WTOR
                         776ms
                                   80us
                                              79us ok
    DC
          I/O PCB
                         776ms
                                  598us
```

Our Commitment to the Future

Support new releases

Exploit new capabilities

Invest in new talent



Thank You

Bring IT to Life.™