

Tools for Monitoring and Tuning your CA IDMS™/DC System

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Abstract

- This high level overview focuses on tools that can be used to monitor and tune CA IDMS/DB and CA IDMS/DC systems to meet SLAs and other performance goals. This session will cover some of the benefits of CA IDMS™ Performance Monitor, CA Mainframe Application Tuner, and CA SYSVIEW® and the value they provide in your environment.



Agenda

- CA IDMS Performance Monitor
- CA SYSVIEW Performance Management
- CA Mainframe Application Tuner

CA IDMS Performance Monitor

CA IDMS Performance Monitor

- Realtime Monitor
 - Specific system-resource statistics at the time of the request
- Interval Monitor
 - System-wide wait time statistics for a unit of time
 - Run batch reports to track system utilization
- Application Monitor
 - Statistics about resource usage by programs, tasks, userids, and lterms
 - Run batch reports to track system utilization

Note: All of these monitors are available for Online Monitoring

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CA IDMS Performance Monitor Realtime Monitor

- Captures and displays snapshot of “current” information about the use of CA IDMS system resources
- Automatically refreshes the screen with updated statistics based on the refresh interval
- Online component only
- Task code - PMRM

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CA IDMS Performance Monitor Realtime Monitor – Resources Monitored

- System Transactions
- Scratch area activity
- Teleprocessing and printer activity
- Current status of user and system tasks in dispatch chain
- Active user and system RUAL transactions
- LTEs which have associated resources

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CA IDMS Performance Monitor Realtime Monitor – Resources Monitored

- Buffer I/O activity
- Status of all defined storage and program pools
- Overviews of database, transaction, task, program and storage pools activity
- SQL detail and summary information

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CA IDMS Performance Monitor Remote Monitoring

- IDMSINFO
 - API
 - Runs in a separate address space
 - Uses cross memory services to provide remote monitoring facilities to CA IDMS Performance Monitor
 - Needs to be started separately from the CV
 - Must be active to use remote monitoring feature of CA IDMS Performance Monitor
 - Only available on z/OS platform

CA IDMS Performance Monitor Remote Monitoring

```

PM-R19.0 SUP$T126          CA, Inc.          V126          16.105 11:01:00.45
CMD-->                      Window : 03
                              Refresh: 10

03 Buffer I/O Summary
-----
  Buffer_Name  Fnd In  Read  Fnd In  Write  Forced  Prefetch  Bcr  Page  Buffer
              Buffer  Count Cache  Count  Write  Hits     Waits Size  Pages #Areas
  - USVBUFF           1         1         1         1         1         1         1   3476    5    1
  - ESSBUFF           6         6         6         6         6         6         6   9076   5    6
  - SSKBUFF           1         1         1         1         1         1         1   3476    5    1
  - ESKBUFF           3         3         3         3         3         3         3   9076    5    3
  - XMBUFF            1         1         1         1         1         1         1   3476    5    1
  - USDBUFF           1         1         1         1         1         1         1   3476    5    1
  - TOOLBUFF          4         2         2         2         2         2         2   4276    5    2
  - LOG BUFFER       1078      150         1         1         1         1   5064    5    1
  - DEFAULT BUFFER   2013     1112         26         26         26         26  32764   30   28

02 Lterm Resource Usage Summary
-----
  Task      Current  Stor  Shrd  Shrd  Priv  Priv  Priv  Pgm  Pgm  Pgm  Bu  Oth  Default  Default  Default
  Lterm_ID Code  Program User_ID #RCE Below  XA Below  XA  Alloc #RCE 24bit 31bit #RCE #RCE Loadlist Dictnode Dictname
  LVTM001 PMRM  PMNDRVR  13    0  7680  768  47KB  48KB  16    0  114KB  0    0  SYSLOAD

01 Realtime Monitor Menu
-----
PFkey Description
PF1 System Ton Unit Summary
PF2 Scratch Manager Detail
PF3 Communication Line Detail
PF4 Active User Task Detail
PF5 Active System Task Detail
PF6 Transaction Detail
PF7 Lterm Resource Usage Summary
PF8 Buffer I/O Summary
PF9 Storage Pool Detail
PF10 Program Pool Detail
    
```

CA IDMS Performance Monitor Interval Monitor

- Tracks information about the use of CA IDMS system resources over an interval of time
- Online component only
- Batch reports available
- Task code - PMIM

CA IDMS Performance Monitor Interval Monitor – Resources Monitored

- DB I/O and Buffer activity
- Area information
 - DDL Log
 - Scratch
 - Queue
 - Message
 - DB Areas
- Line I/O
- Storage pool and Program pool information

CA IDMS Performance Monitor Interval Monitor – Resources Monitored

- Interval Statistics
- Transaction Statistics
- SQL Statistics

CA IDMS Performance Monitor Interval Monitor – Resources Monitored

```

PM-R19.0 SUPS1126          CA, Inc.          V126          16.105 10:59:48.07
CMD--> _
01 08:41 MENU Interval Monitor

Detail  Hist  Description          Detail  Hist  Description
-----  ---  -
PF1     -     Summary              PF2     -     Wait Type
PF3     -     DB DBkey/Area        PF4     -     DDL Log
PF5     -     IO                   PF6     -     Scratch
PF7     -     Area                 PF8     -     Queue
PF9     -     Buffer                PF10    -     Message
PF11    -     Journal
PF13    -     Storage              PF14    -     Line IO
PF15    -     Pgm Pool             PF16    -     Storage Type
PF17    -     Loads                PF18    -     Interval Statistics
PF19    -     Cmslib              PF20    -     Transaction Statistics
PF21    -     PMIM Status/Options PF22    -     SQL Statistics
PF23    -     Sysplex Menu

Interval Monitor is Online and Collecting Data
    
```

CA IDMS Performance Monitor Application Monitor

- Tracks the use of CA IDMS application statistics
- Must have STATISTICS TRANSACTION ON at system generation time
 - DC275912: TASK STATISTICS NOT GENNED
- Online component only
- Batch reports available
- Task code – PMAM

CA IDMS Performance Monitor Application Monitor

```

PM-R19.0 SUPSP126          CA, Inc.          V126          16.105 10:58:26.34
CMD-->                    Window : 01

_01 Application Monitor Menu

PFkey Description          PFkey Description
-- PF1 Entity List          -- PF2 Task List
-- PF3 Entity Selection     -- PF4 General Statistics
-- PF5 PC Statistics        -- PF6 DB Statistics
-- PF7 ADS Statistics       -- PF8 Task Wait Statistics
-- PF9 DBKey Wait Statistics -- PF10 PMAM Status/Options
-- PF11 SQL Statistics

Application Monitor is Online and Collecting Data
    
```

CA IDMS SYSVIEW Performance Management

CA SYSVIEW

- Includes an option to monitor CA IDMS systems
- Has CA IDMS Specific displays
 - Gets data from IDMSINFO address space
- Can monitor any information that CA IDMS Performance Monitor Realtime Monitor can display

CA SYSVIEW

Commands Added to the CA IDMS Component

- IDBUFFIO - IDMS buffer I/O
- IDDBASES - IDMS database overview
- IDDBIOD - IDMS database I/O drivers
- IDJRNL - IDMS journal activity
- IDLINES - IDMS communication lines
- IDLTERMS - IDMS logical terminals
- IDLTRESU - IDMS logical terminal resource usage
- IDMS- Set target IDMS

CA SYSVIEW

Commands Added to the CA IDMS Component (cont.)

- IDMSTEST - IDMS test
- IDPGMPL- IDMS program pools
- IDRU - IDMS system run units
- IDSCRMGR - IDMS scratch manager
- IDSQL - IDMS SQL usage
- IDSTG - IDMS storage pool overview
- IDSTGPL - IDMS storage pools

CA SYSVIEW

Commands Added to the CA IDMS Component (cont.)

- IDTASKS - IDMS active tasks
- IDTRANS - IDMS transactions
- IDTRANOV - IDMS transaction overview
- IDTSKPGM - IDMS task/program pool overview

CA SYSVIEW

```

SYSVIEW (4.1) CR11 ----- MENU, Primary Option Menu ----- 04/13/16 16:07:41
Option ==> _ Scroll *==> PAGE
----- Lvl 1 Row 1-19/19
Option Command Description
- 1 MENU OVERVIEW System overview
- 2 MENU MVS MVS displays
- 3 MENU JES JES job and output management
- 4 MENU CICS CICS displays
- 5 MENU DATACOM CA Datacom displays
- 6 MENU DB2 Database 2 displays
- 7 MENU IDMS CA IDMS displays
- 8 MENU IMS IMS displays
- 9 MENU MQ WebSphere MQ displays
- 10 MENU NETWORK Network and TCP/IP displays
- 11 MENU USS UNIX system services displays
- 12 MENU CAPTURE Event capture and SMF/RMF collection
- 13 MENU ADMIN SYSVIEW administration
- 14 MENU SDSF SDSF migration menu
- 15 MENU PRODUCTS Product integration menu
- 16 MENU HELP Online help information
- 17 END Terminate SYSVIEW session

http://wiki.ca.com/sysview SYSVIEW Wiki
-----
DSLIST *GSVX000 -TUNT531
    
```

CA SYSVIEW

```

SYSVIEW 14.1 CA11 ----- MENU, IDMS Menu ----- 04/13/16 16:08:05
Option ==> _ ----- Scroll *==> PAGE -----
----- Lvl 2 Row 1-19/26 -----
Jobname PARDA18 ASID 0314 Jobid TS062715 IDMS n/a
-----
Option Command Parameters Description
- 1 IDMSLIST CA IDMS address space list
- 2 IDMS Set target IDMS address space
- 3 IDMSSET Alter IDMS resources
-----
- 4 IDBUFFIO Buffer I/O summary
- 5 IDBUFFIO DETAIL Buffer I/O detail
- 6 IDDBASES Database overview
- 7 IDDBIOD Database I/O drivers
- 8 IDJFNL Journal activity
- 9 IDLINES Communication lines
- 10 IDLTERMS Logical terminals
- 11 IDLTRESU Logical terminal resource usage
- 12 IDPGMPL Program pools
- 13 IDRU System run units summary
- 14 IDRU DETAIL System run units detail
- 15 IDSCRMGR Scratch manager
- 16 IDSQL SQL usage
- 17 IDSTG Storage pool overview
- 18 IDSTGPL Storage pools
-----
DSLIST *GSVX000 -TUNT531
  
```

CA SYSVIEW

```

SYSVIEW 14.1 CA11 ----- MENU, IDMS Menu ----- 04/13/16 16:08:24
Option ==> _ ----- Scroll *==> PAGE -----
----- Lvl 2 Row 20-26/26 -----
Jobname PARDA18 ASID 0314 Jobid TS062715 IDMS n/a
-----
Option Command Parameters Description
- 19 IDTASKS Active tasks
- 20 IDTRANOV Transaction overview
- 21 IDTRANS Transactions
- 22 IDTSKPGM Task and program pool overview
-----
Description
- 23 IDMS online reference
-----
DSLIST *GSVX000 -TUNT531
  
```

CA Mainframe Application Tuner

CA Mainframe Application Tuner

- Supports the CA IDMS environment
- Has CA IDMS Specific displays
 - Gets data from IDMSINFO address space
- Monitors CA IDMS system via “sampling” address space

CA Mainframe Application Tuner

Monitors

- Task status/waits
- TCB/SRB usage
- Dataset usage
- Delays (IDMS/DML)

Note: For more information – See MAT User Guide CH. 16

CA Mainframe Application Tuner Display CA IDMS Delays

- Enables you to pinpoint bottlenecks due to CA IDMS requests
- Easily see percentages of CA IDMS samples taken during the monitored period
 - CA MAT reports whether or not each task is executing or waiting at the time the samples were taken
- Two methods of accessing panel
 - option 15 from the Interactive Analysis Menu
 - line command S to select a CA IDMS request from the DataView panel

CA Mainframe Application Tuner Delays

- Profile
 - Name of the profile that you specified when you created the monitor definition
- Options
 - Type of analysis in effect: NORMAL, ALL, ACTIVE, or WAIT. An asterisk (*) following the value indicates that tasks or transactions have been selected for analysis
- Task
 - Unique name that identifies a task to CA IDMS DC/UCF. The user types the task code in response to the DC/UCF system prompt. Task codes are defined at system generation or by using a DCMT VARY DYNAMIC TASK command

CA Mainframe Application Tuner Delays

- Module
 - Name of the program requesting CA IDMS DB/DC services, when known, or the name of the program invoked by specifying the task code
- Offset
 - Relative address within the module to which control will be returned upon completion of the CA IDMS DB/DC service request
- Status
 - Status of the CA IDMS DB/DC service request, whether it is waiting for resources, ready to execute, or executing

CA Mainframe Application Tuner Delays

- Totl%
 - Percentage of CA IDMS samples taken during the monitored period where CA Mainframe Application Tuner detected CA IDMS TASKs either executing or waiting for resources
- Visual
 - Visual depiction of the Totl% value
- Wait
 - Identifier of the ECB on which the task is waiting. The ECB can be internal as defined by CA IDMS macro #ECBDS or external as defined by CA IDMS macro #ELEDs
 - Note: Scroll right to see this field on the CA IDMS Delays panel

CA Mainframe Application Tuner Delays - Commands

- MOde TASK
 - Summarizes the data by task code
- MOde MODule
 - Summarizes the data by module and offset (default)
- DML
 - Displays delays caused by DML statements
- D
 - Line command to display detail information about the selected row

CA Mainframe Application Tuner Display DML Delays

- Enables you to pinpoint bottlenecks due to requests from DML statements
- See current or most recent DML statement in effect when CA MAT detected CA IDMS waiting for resources

CA Mainframe Application Tuner DML Delays

- Profile
 - Name of the profile that you specified when you created the monitor definition
- Options
 - Type of analysis in effect: NORMAL, ALL, ACTIVE, or WAIT.
 - An asterisk (*) following the value indicates that tasks or transactions have been selected for analysis
- TaskCode
 - Unique name that identifies a task to CA IDMS DC/UCF
 - Defined at system generation or by using a DCMT VARY DYNAMIC TASK command

CA Mainframe Application Tuner DML Delays

- **Module**
 - Name of the program requesting CA IDMS DB/DC services, when known, or the name of the program invoked by specifying the task code
- **Offset**
 - Relative address within the module to which control will be returned upon completion of the CA IDMS DB/DC service request
- **DML SEQ**
 - An optional precompiler-generated number identifying the physical sequence in which DML statements appear in a program

CA Mainframe Application Tuner DML Delays

- **TotI%**
 - Percentage of the monitored period where CA MAT detected DML statements waiting for resources
- **Visual**
 - Visual depiction of the TotI% value

CA Mainframe Application Tuner DML Delays

- DML Verb
 - Command in a DML statement requesting a data manipulation operation
 - FINDs are converted to OBTAINs, as appropriate
- DML Target
 - DML statement object of the requested operation (such as a record or set name)
- DML Qualifier
 - DML statement object qualifying the target (such as an area or set name when the target is a record name)

CA Mainframe Application Tuner

```

CA MAT ----- Interactive Analysis -----
OPTION ==> _

Enter option to analyze the monitored job:          Profile: SUP$TE99
                                                    Options: ALL

CA MAT Monitor Information                          Subsystem Details
-----
0  Overview   - Monitor session information          10 DB2   - View all SQL
1  TaskView  - Activity by task                     11 IMS   - IMS Transactions
2  DelayView - Program delays                       12 JVM   - Java Virtual Machine
3  CodeView  - Program activity                     13 WAS   - WebSphere Trans.
4  TimeView  - Samples by time                      14 CIC   - CICS Summary Stats
5  DataView  - Dataset information                  15 IDMS  - CA-IDMS Activity
6  TranView  - Activity by transaction              16 DCM   - CA-Datacom Activity
7  ModView   - Module layout                        17 IDL   - CA-Ideal Activity
8  PoolView  - Buffer pools                          18 ADA   - Adabas Activity
9  USSView   - Unix System Services                 19 NAT   - Natural Activity

ACTIVE - switch mode to ACTIVE      WAIT - switch mode to WAIT
NORMAL - switch mode to NORMAL      ALL  - switch mode to ALL

Press END to exit analysis

```

CA Mainframe Application Tuner

```

CA MAT ----- IDMS Delays ----- Row 1 to 14 of 43
COMMAND ==> _ SCROLL ==> CSR

Primary Commands: Mode TASK / MODULE , DML (delays) Profile: SUP$TE99
Line commands: D - Detail L - Listing Options: ALL
Mode: Module

CV number: 120 IDMS Release: 18.5.00 Local Mode: NO

LC TaskCode Module Offset Status Wait Totl% Visual
-----
ADS2 PTCRUPD 000005D4 Task Executing 14.29
ADS2 PTCRUPD 000006E0 Task Executing 6.59 ==>
ADS2 PTCRUPD 000006B4 Task Executing 6.59 ==>
ADS2 PTCRUPD 000006A4 Task Executing 5.49 ==>
ADS2 PTCRUPD 00000694 Task Executing 5.49 ==>
ADS2 PTCRUPD 000006D0 Task Executing 4.40 ==>
ADS2 ADSOMAIN 00000000 Task Executing 4.40 ==>
ADS2 PTCRUPD 00000638 Task Executing 4.40 ==>
ADS2 PTCRUPD 00000684 Task Executing 3.30 ==>
ADS2 PTCRUPD 000005D4 Task is Waiting LKWECEB 2.20
ADS2 PTCRUPD 000006E0 Task is Waiting DBIO WRITE ECB 2.20
ADS2 PTCRUPD 000006E0 Task is Waiting DBIO JOURNAL WRITE 2.20
ADS2 PTCRUPD 000006D0 Task is Waiting DBIO JOURNAL WRITE 2.20
ADS2 PTCRUPD 00000648 Task Executing 2.20
-DLIST GSVX000P *TUNT531
  
```

CA Mainframe Application Tuner

```

CA MAT ----- IDMS Delays ----- Row 15 to 28 of 43
COMMAND ==> _ SCROLL ==> CSR

Primary Commands: Mode TASK / MODULE , DML (delays) Profile: SUP$TE99
Line commands: D - Detail L - Listing Options: ALL
Mode: Module

CV number: 120 IDMS Release: 18.5.00 Local Mode: NO

LC TaskCode Module Offset Status Wait Totl% Visual
-----
ADS2 PTCRUPD 000005D4 Task is Waiting LKWECEB 2.20
ADS2 PTCRUPD 000004B4 Task Executing 2.20
ADS2 PTCRUPD 000006B4 Task is Waiting BMESECEB 1.10
ADS2 ADSOMAIN 000006FC Task Executing 1.10
ADS2 ADSOMAIN 00000800 Task Executing 1.10
ADS2 ADSOMAIN 000046E0 Task Executing 1.10
ADS2 PTCRUPD 00000478 Task Executing 1.10
ADS2 PTCRUPD 000005E4 Task Executing 1.10
ADS2 PTCRUPD 00000638 Task is Waiting DBIO JOURNAL WRITE 1.10
ADS2 PTCRUPD 00000638 Task is Waiting DBIO WRITE ECB 1.10
ADS2 PTCRUPD 00000638 Task is Waiting JBCECEB 1.10
ADS2 PTCRUPD 00000684 Task is Waiting DBIO JOURNAL WRITE 1.10
ADS2 PTCRUPD 00000684 Task is Waiting DBIO READ ECB 1.10
ADS2 PTCRUPD 00000684 Task is Waiting DBIO WRITE ECB 1.10
-DLIST GSVX000P *TUNT531
  
```

CA Mainframe Application Tuner

```

CA MAT ----- IDMS Detail ----- Row 1 to 6 of 6
COMMAND ==> _ SCROLL ==> CSR
Profile: SUP$TE99
Options: ALL

Field Name      Field Value
-----
Task Code      ADS2
Module         PTCRUPD
Offset         000005D4
Status         Task Executing
Wait
Total%         14.29
***** End of Table *****
    
```



Summary

- CA IDMS Performance Monitor
 - Realtime Monitor
 - Interval Monitor
 - Application Monitor
- CA SYSVIEW Performance Management
- CA Mainframe Application Tuner



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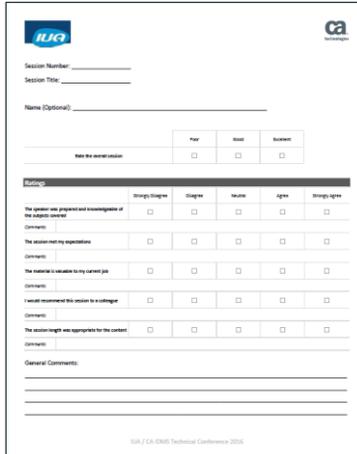
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