

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

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IUA/CA IDMS™ Technical Conference  
May 16-20, 2016



### 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 SUPST126 CA, Inc. V126 16.105 11:01:00.45  
CMD--> Window : 03  
Refresh: 10

03 Buffer I/O Summary

Buffer Name	Find In Buffer	Read Count	Find In Cache	Write Count	Forced Write	Prefetch Hits	Bcr Waits	Page Size	Buffer Pages	#Areas
USVBUFF		1		1				3476	5	1
ESSEBUFF		6		6				9076	5	6
ESKEBUFF		1		1				3476	5	1
ESKEBUFF		3		3				9076	5	3
XDMBUFF		1		1				3476	5	1
USDBUFF		1		1				3476	5	1
TOOLBUFF		4		2				4276	5	2
LOG BUFFER	1078	150						5064	5	1
DEFAULT BUFFER	2013	1112		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	Aloc	#RCE	24bit	31bit	#RCE	#RCE	Loadlist	Dictnode	Dictname	
LTVTMO01 PMRM	PMNDRVR		13	0	7680	768	47KB	48KB	16	0	114KB	0	0	SYSLOAD	

01 Realtime Monitor Menu

PFkey	Description	PFkey	Description
PF1	System Run 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 SUP$1126          CA, Inc.          V126          16.105 10:59:48.07
CMD--> _                   Window : 01

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 - PMW 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 SUP$T126          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 DC 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
- IDRUC - 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 TSU62715 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 TSU62715 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

- **Totl%**
  - Percentage of the monitored period where CA MAT detected DML statements waiting for resources
- **Visual**
  - Visual depiction of the Totl% 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-Datcom 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
-DSLIST 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 000004E0 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
-DSLIST 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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- Rate the overall session:** A table with columns for Poor, Good, Excellent and a row for the overall session rating.
- Rating Scale:** A table with columns for Strongly Dislike, Dislike, Neutral, Agree, Strongly Agree.
- Questions:** Four questions with checkboxes for 'Strongly Dislike', 'Dislike', 'Neutral', 'Agree', and 'Strongly Agree'.
  - The speaker was prepared and knowledgeable of the subject matter.
  - The session met my expectations.
  - The material is valuable to my current job.
  - Overall, I would recommend this session to a colleague.
  - The session length was appropriate for the content.
- Comments:** A section for providing additional feedback.
- General Comments:** A section for overall session feedback.