

High Availability with CA IDMS™

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Abstract

Having your system available at all times has never been more important. CA IDMS™ offers many capabilities to facilitate high availability and 24X7 processing and new ones frequently added.

Learn about parallel Sysplex features and topics related to database reorganization, dynamic system changes, time changes, statistics and software maintenance.



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High Availability with CA IDMS Agenda



Why high
availability?

Parallel
Sysplex

Database
options

CA IDMS/DC
options

Software
maintenance

Why High?

- 24x7 business and service
- International operations
- Zero outage initiatives

Are you angry when the online bank is down at 6 am?

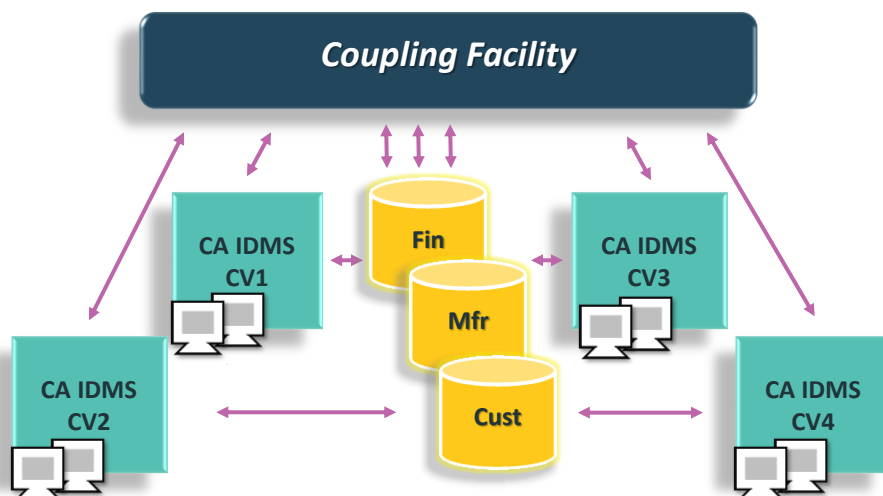


Parallel Sysplex Coupling Facility

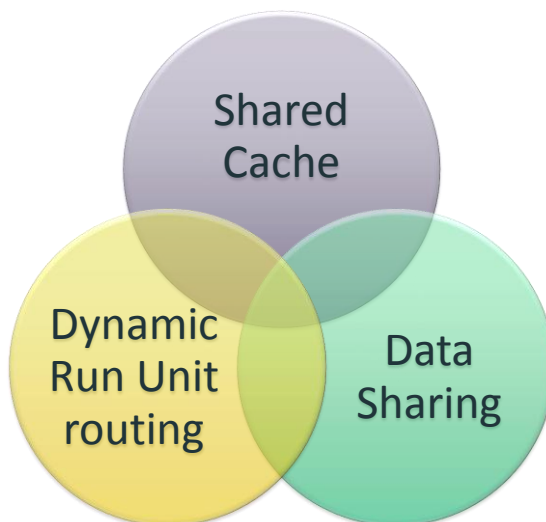
Coupling facility provides
large high-speed buffer
to share resources

Enables more flexible,
resilient, balanced
operations

CA IDMS in a Parallel Sysplex

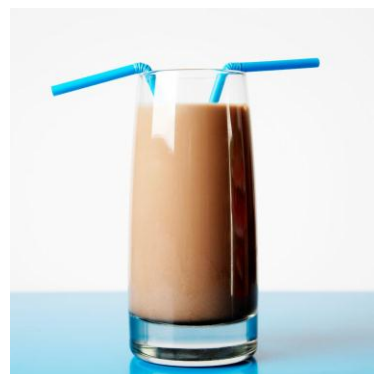


CA IDMS Parallel Sysplex features



Parallel Sysplex – Shared Cache

- Enables multiple CV retrieval
 - One update system
 - Multiple retrieval systems
- Enables data sharing (multiple update systems)



Defining the Shared Cache

- Define the Shared Cache to the Coupling Facility



```
STRUCTURE NAME(IDMSSUPPCACHE002)  
SIZE(5120) PREFLIST(COUPLET1)
```

9



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Defining the Shared Cache to CA IDMS



```
ALTER  
  DMCL GLBLDMCL  
  DATA SHARING DEFAULT  
  SHARED CACHE IDMSSUPPCACHE002  
  LOCK ENTRIES 100000 MEMBERS 5  
  ON CONNECTIVITY LOSS NOABEND
```

```
INCLUDE SEGMENT DBCR  
  DATA SHARING YES  
  DEFAULT SHARED CACHE  
  IDMSSUPPCACHE002
```

10



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Shared Cache benefits

Improve performance

- For update and retrieval CVs
- Second level of buffering

Share data in retrieval across multiple CVs

Retrieval CVs stay active when update CV is down

Enables Data Sharing

11



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Parallel Sysplex – Data Sharing

Multiple CVs update the same DB

Key elements

- **Data sharing group**
 - Named collection of CA IDMS systems in a Sysplex
 - Each CA IDMS system is a member of that group
- **Shared Cache** maintains file data

Not the same as a DBGROUP



12



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Parallel Sysplex – Data Sharing

Definitions

- Coupling facility in K bytes
 - Define a list structure
 - Define a lock structure

- Definition in DMCL
 - Default data sharing attribute
 - Segment or file data sharing attribute

- SYSIDMS (next slide)

```
STRUCTURE NAME(CAIDMSSUPPGRP1LI)
SIZE(4096) PREFLIST(COUPLET1)
```

```
STRUCTURE NAME(CAIDMSSUPPGRP1LK)
SIZE(5120) PREFLIST(COUPLET1)
```

```
+ - DEFAULT SHARED CACHE default-
cache-name - !
```

```
DATA SHARING YES
```

```
DATA SHARING YES/NO/DEFAULT
```

13



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Parallel Sysplex – Data Sharing

SYSIDMS definition in CV JCL

```
//SYSIDMS DD *
DSGROUP=SUPPGRP1
DCNAME=TECHD110
```

14



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Parallel Sysplex features Data Sharing benefits

Allow
multiple CVs
to update
the same
database

Supports
24x7
processing

Enables CV
fail-over

Improves
performance

15



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Parallel Sysplex - Dynamic run unit routing

Workload balancing

- Between CA IDMS/DB systems in a Sysplex
- Dynamic based on actual system load
- DBGROUP

- Definitions
 - Backend and frontend IDMS
 - Coupling facility structure



16



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Parallel Sysplex - Dynamic run unit routing

DBGROUPs

- **Backend definitions**
 - Add DBGROUP statement(s) to Database Name Table
 - CREATE DBGROUP assigns the backend(s) to a DBGROUP(S)

```
CREATE DBGROUP R185DBTB.SPGROUP1 ENABLED
```
- **Frontend definitions**
 - Define backend DBGROUP as a node in the Resource name table

```
ADD NODE SPGROUP1 GROUP DEFAULT NODE TECHD110
```

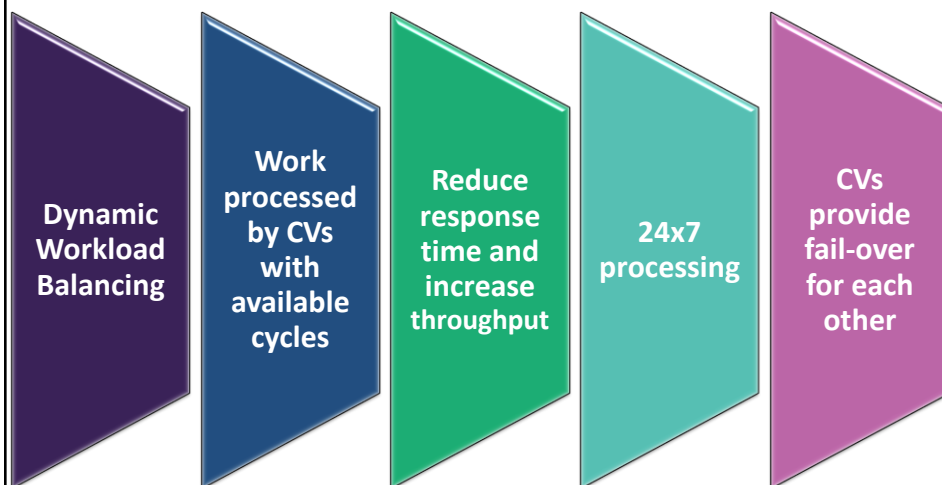
Parallel Sysplex – Dynamic run unit routing

Coupling facility definition

- Define a Coupling Facility structure for each DBGROUP
- DBGROUP name prefixed with "CAIDMS"
- Size is in K bytes

```
STRUCTURE
NAME(CAIDMSSPGROUP1)
SIZE(512) PREFLIST(xxx)
```

Parallel Sysplex – Dynamic run unit routing benefits



19



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Database options and features



20



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Backup and reorganization

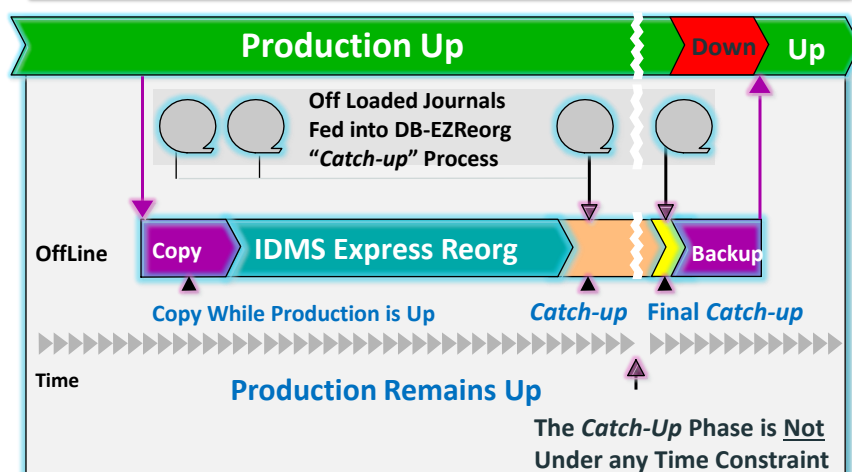
- Active system backups
 - Quiesced backup – no updates during backup
 - Hot Backup – database updated during backup

- Reorganization – CA IDMS Express Reorg
 - Database processed in slices
 - Reduces database downtime



CA IDMS Express Reorg with Cogito DB EZReorg

- *Re-org your production database while it's online*
- *Reduce database downtime*



CA IDMS/DC options and features – Scratch

Scratch above the bar – much larger than XA Scratch

Dynamically extend scratch in memory

CV Sysgen
SYSTEM
statement

Online DCMT
VARY SCRATCH

Batch SYSIDMS
parameters

23



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CA IDMS/DC options and features – Statistics

- Expanded statistics fields
 - From single to double words
 - Larger values displayed in OPER WATCH STORAGE and DCMT DISPLAY...
 - Scientific location for large values
 - ***Less frequent shutdowns***
- Interval roll for statistics
 - Automatic writing to the log and cleared at specific times



24



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CA IDMS/DC options and features – dynamic changes

SYSGEN refresh ... dynamically

- Add lines and terminals
- Add or extend storage pools
- Extend program pools

CA IDMS/DC Operations ... dynamically

- Set system trace
- VARY NEW COPY the UCF front end system table

25



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CA IDMS/DC options and features – UTC support → *New in 18.5*

- Summer Time / Daylight Savings Time
“fall back”
- All critical timestamps based on UTC
(Universal Time Constant)
- **Benefits**
 - 24/7
 - Removes one hour shutdown at fall back



26



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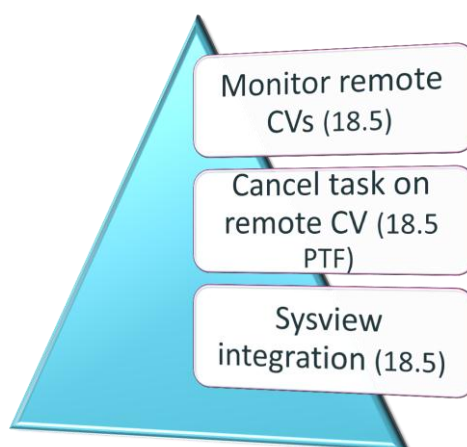
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CA IDMS/DC options and features *Internal and external features*

- Automatic restart
 - Drivers and system tasks
 - CA IDMS™ Performance Monitor
 - Deadlock detection task
- Automatic extension of resources
 - RLE, RCE, and DPE
- Auto Tuning
 - Automatic adjustment of RLE, RCE, DPE based on experience

CA IDMS/DC options and features *CA IDMS™ Performance Monitor*



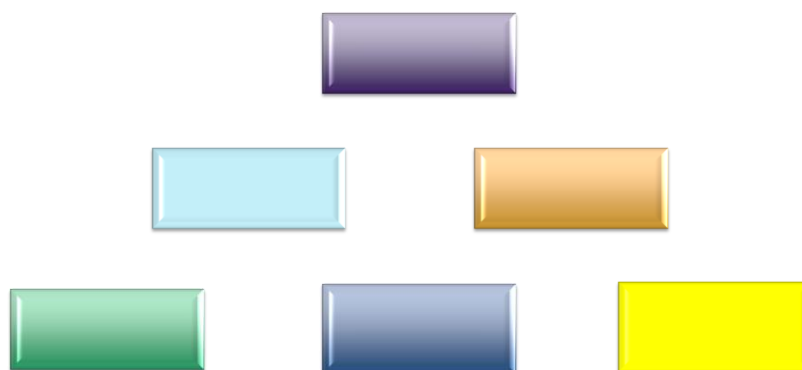
Software Maintenance

- Use Chorus™ Software Manager (CSM) if possible
 - Download maintenance
 - Apply maintenance
- After applying maintenance, dynamically reload CA IDMS nucleus and driver modules, EXCEPT:

RHDCOS00	RHDCDBRC
RHDCMSTR	RHDCLGSD
RHDCSCRN	IDMSUXIT



What else could we do to enhance 24x7?



What is most important?

High Availability Summary



A requirement
for most

New 24/7
features in each
release

Parallel Sysplex
CF for multiple
systems support

DB and DC
options, easier
maintenance

Tell us what you
need next!

31



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32



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Questions and Answers