IBM GLOBAL SERVICES

IBM Information >>> On Demand 2006

Why Move to HALDB

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TAKE BACK CONTROL

IBM INFORMATION ON DEMAND 2006
October 15 – 20, 2006
Anaheim Convention Center
Anaheim, California

Why Move to HALDB?

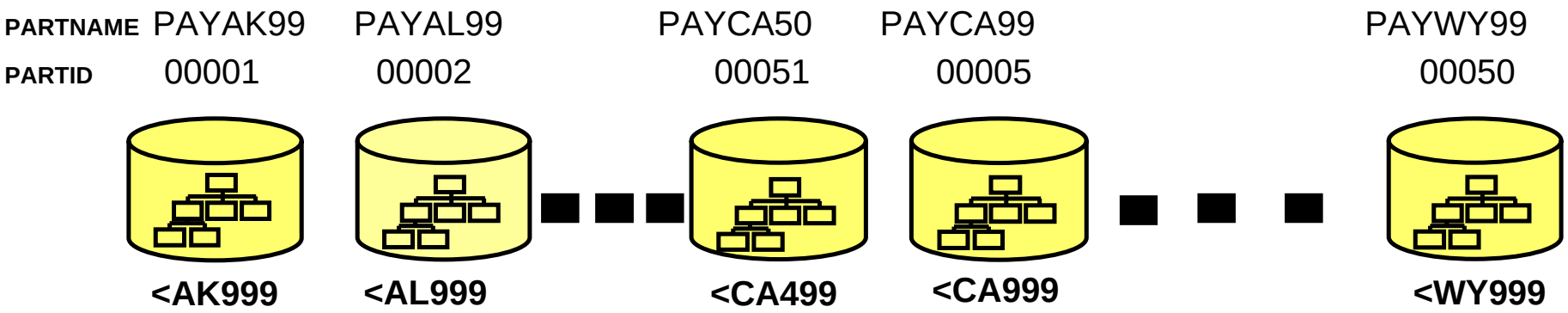
- High Availability through partition independence
- Large Databases (Removing Size Restrictions)
- Designing Application for HALDB

Why Move to HALDB?

- **High Availability through partition independence**

High Availability
Partition Independence

- Partition Independence
  - DBRC authorizes on a partition level
    - Data partitioned into state/country
    - Data partitioned into time zones

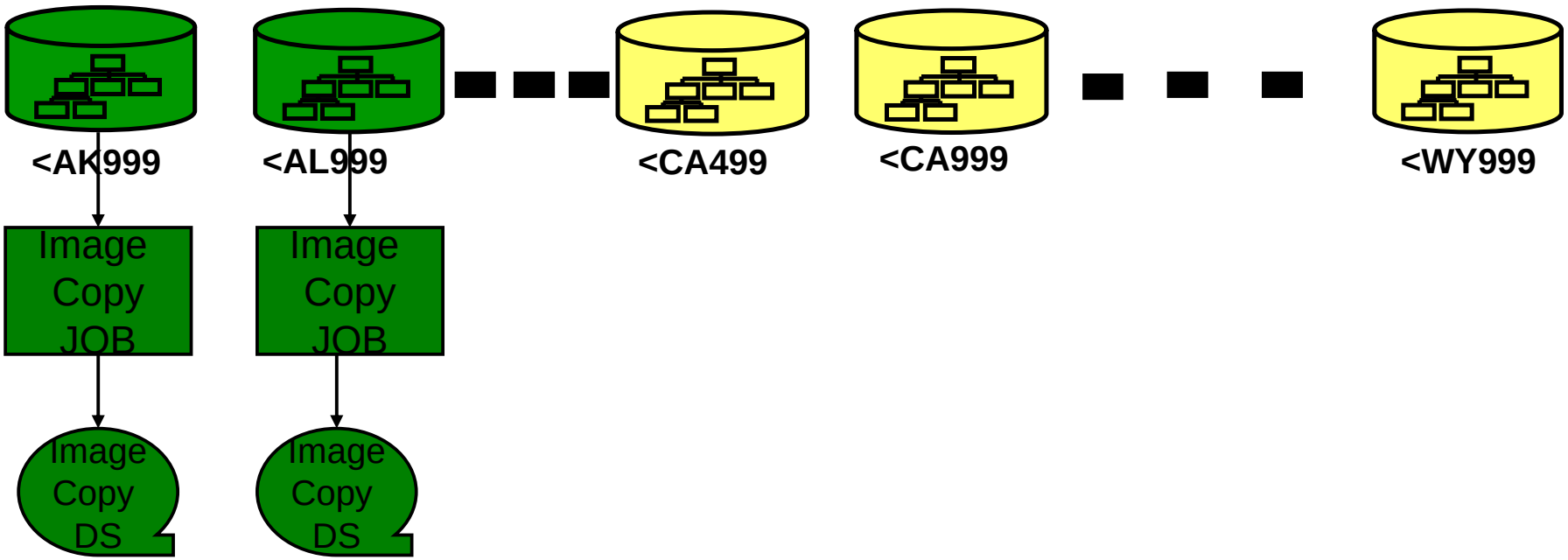


High Availability
Partition Independence

Backup
Processing

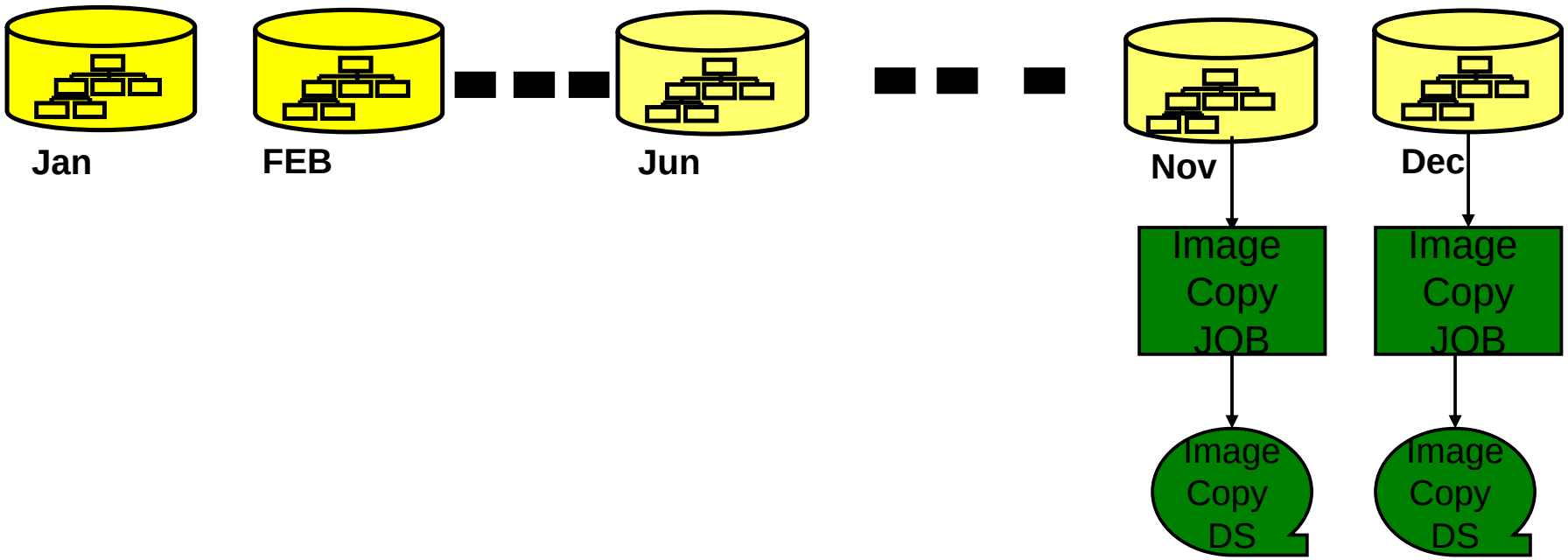
Backup Processing

- Partition backups are independent
  - Concurrent processing
  - Shorter elapse times



Backup Processing

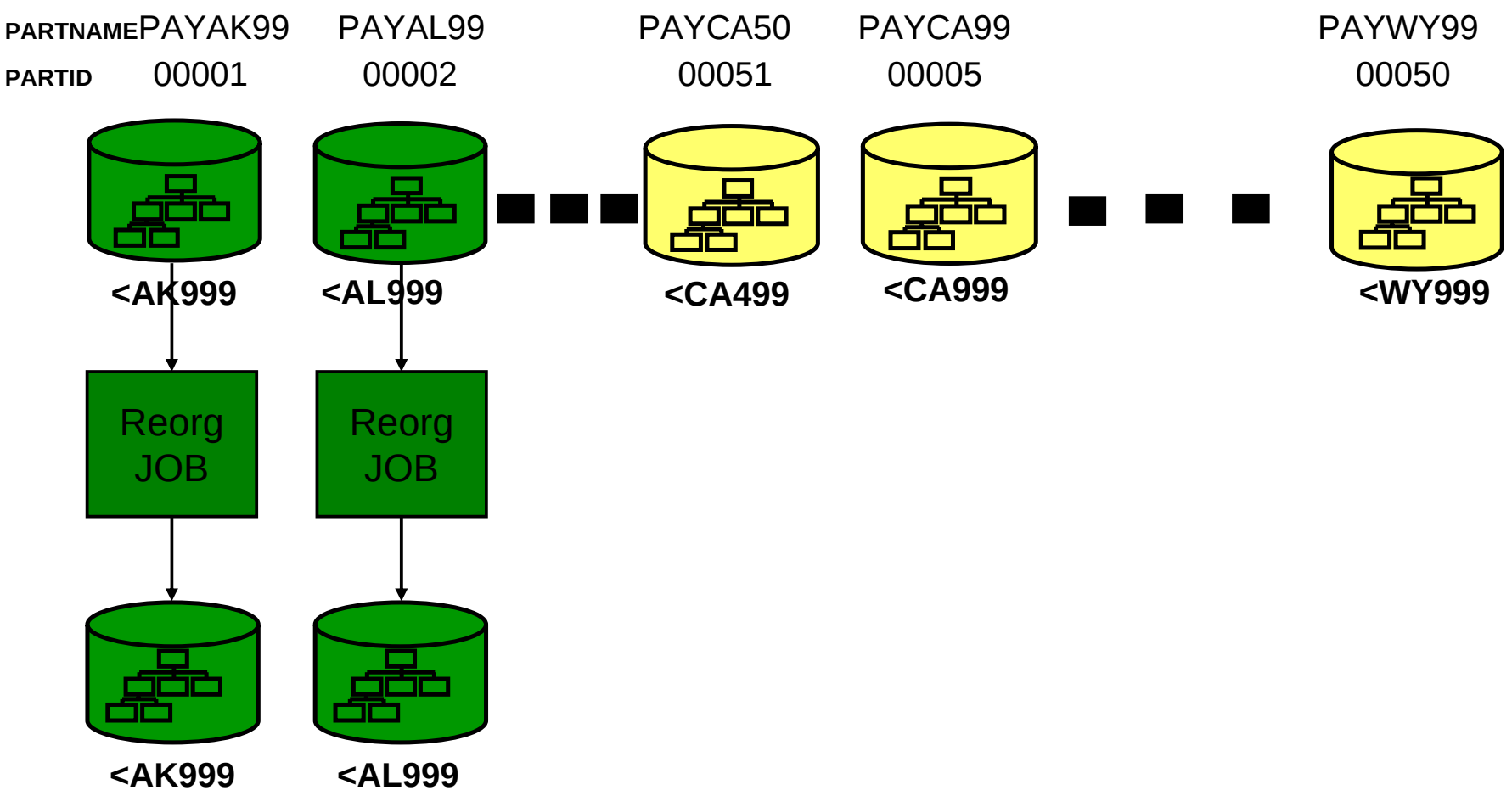
- Partition backups are independent
  - Different timing
  - Only backup active partitions



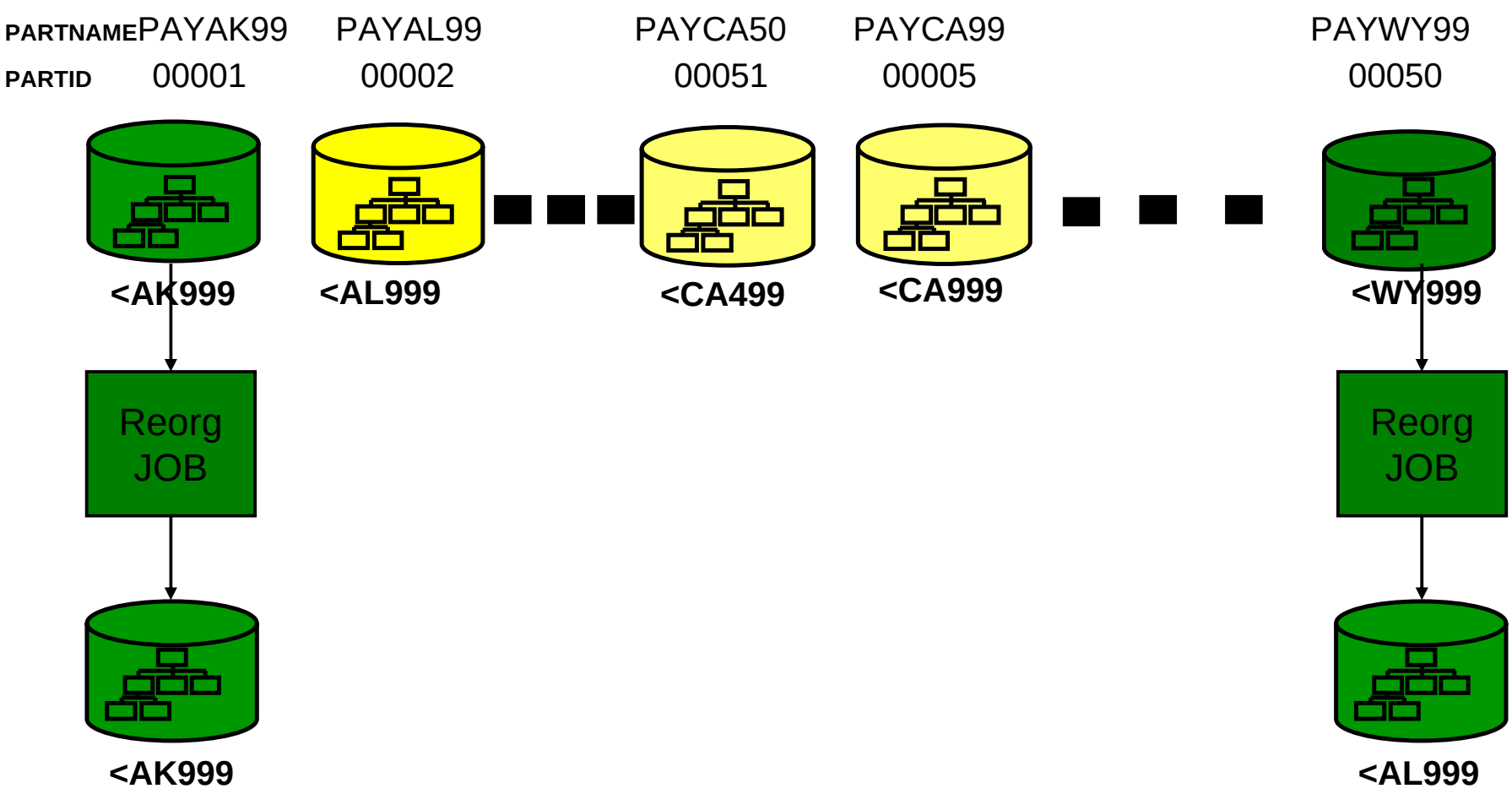
High Availability
Partition Independence

Reorganization Processing

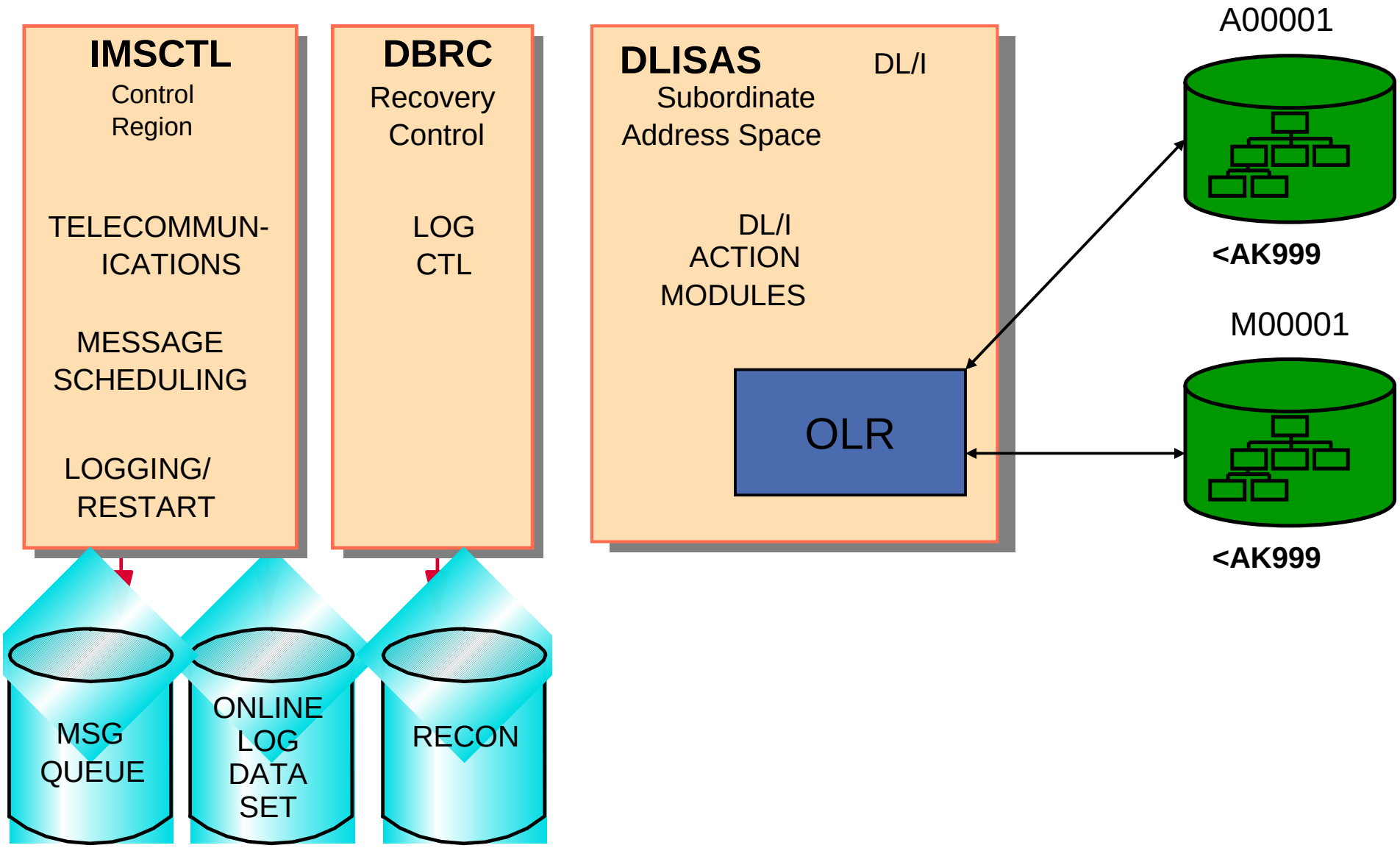
Reorganization Processing



Reorganization Processing



High Availability - Online Reorganization

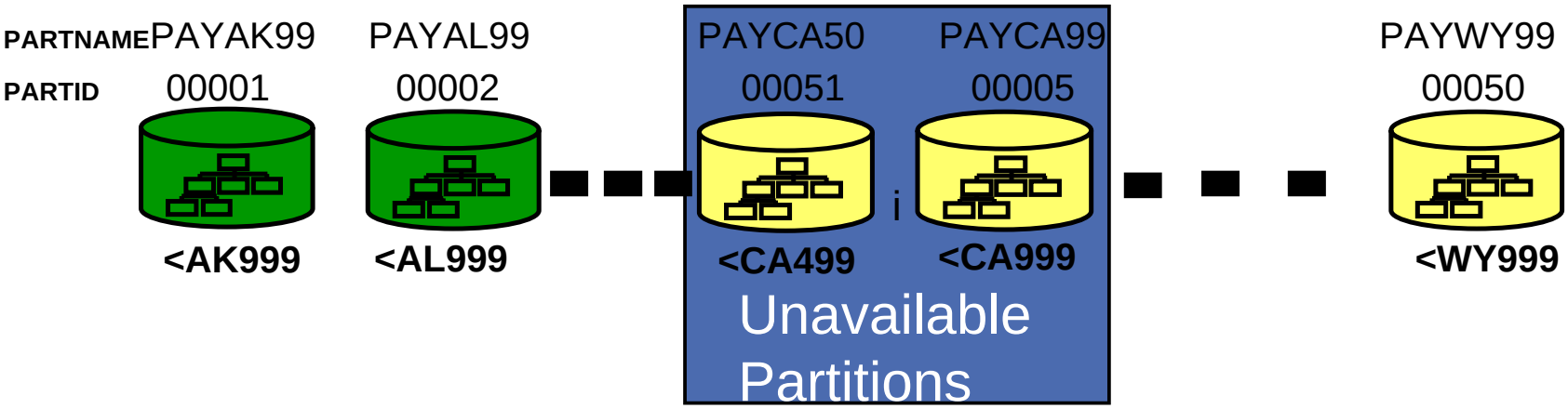


High Availability
Partition Independence

Increased Application Processing

Increased Application Processing

- INIT status call
  - Allow programs to handle unavailable partitions
    - Get “BA” status code
    - Avoid the ‘3303’ abend
    - GN after a “BA” moves to next available partition
    - “NA” – Master database not available

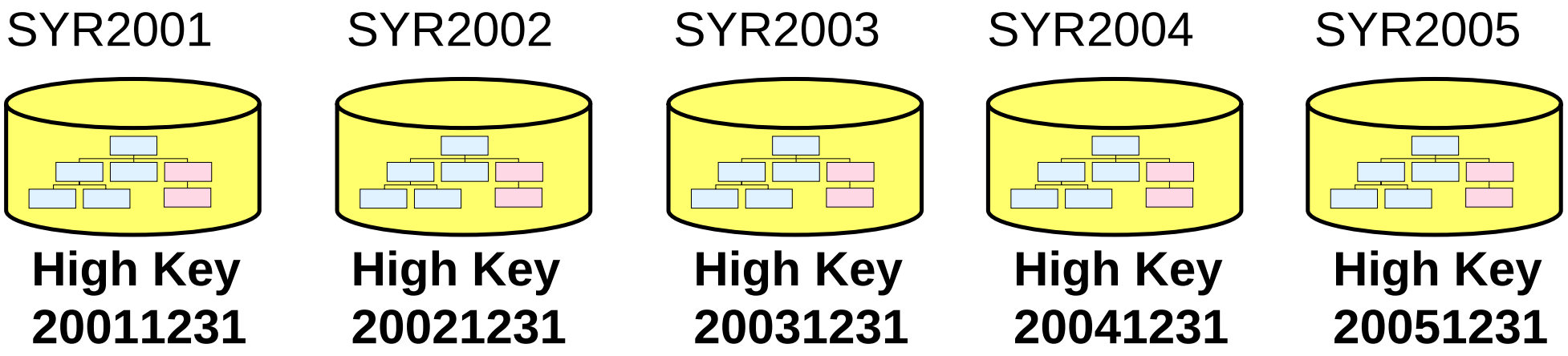


Increased Application Processing

```
DCL 1 STATUS_CALL
    ,5 LL1       BIT(08)         INIT('00000000'B)
    ,5 LL2       BIT(08)         INIT('00000000'B)
    ,5 LL3       BIT(08)         INIT('00000000'B)
    ,5 LL4       BIT(08)         INIT('00010001'B)
    ,5 ZZ1       FIXED BIN(15)  INIT(0)
    ,5 TEXT      CHAR(17)    INIT('STATUS GROUPA    ')
    ;
CALL PLITDLI($3,INIT,IOPCP_PTR,STATUS_CALL);
```

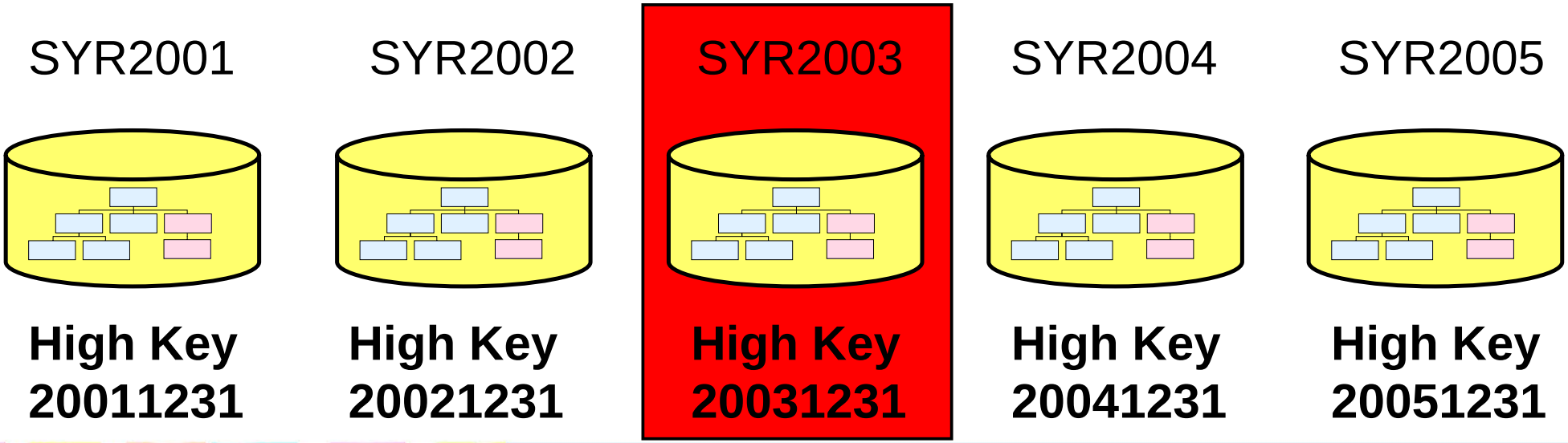
Increased Application Processing

- Processing partitions independently
  - DFSHALDB DD statement



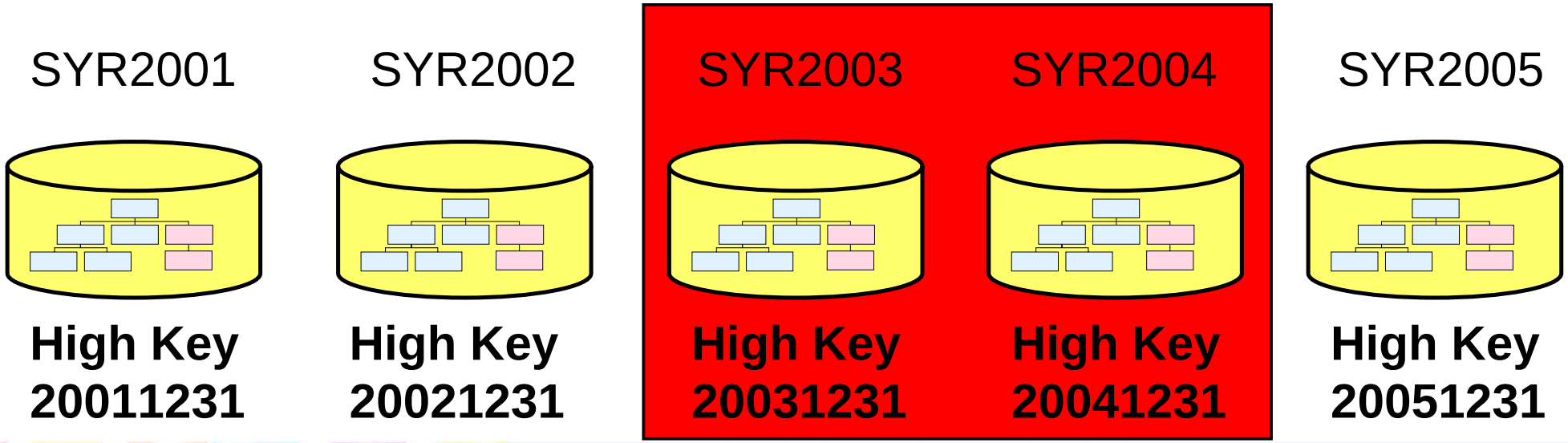
Increased Application Processing

- Processing partitions independently
  - DFSHALDB DD statement
    - Single partition processing



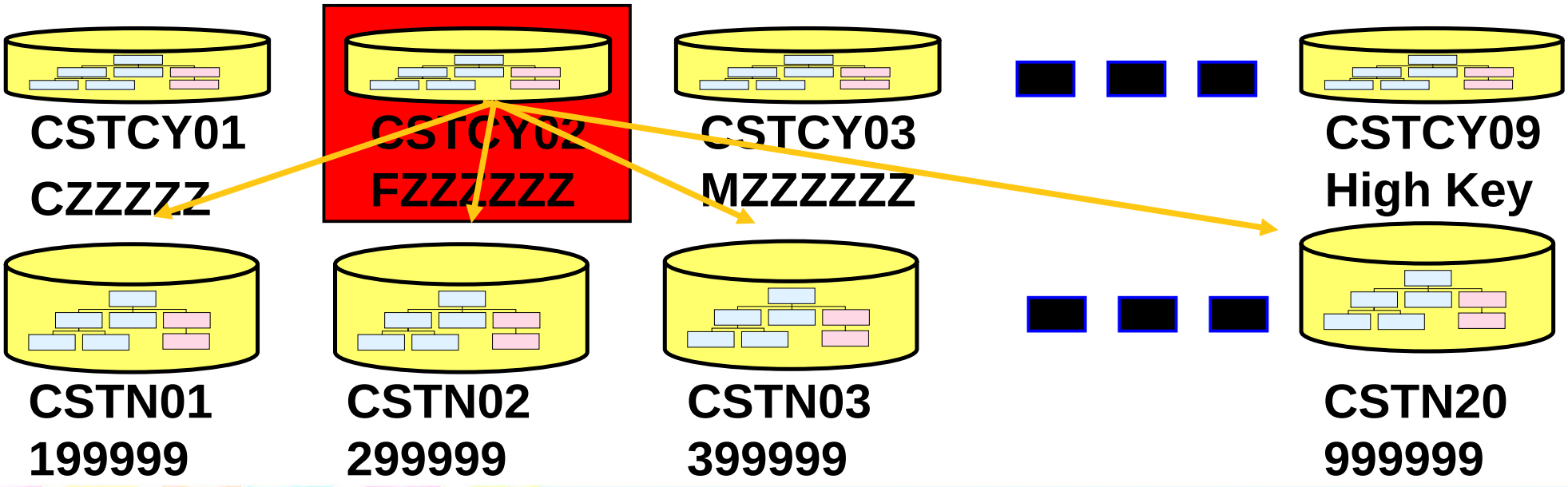
Increased Application Processing

- Processing partitions independently
  - DFSHALDB DD statement
    - Single partition processing\
    - Partition name,xx - sequential partitions
      - IMS V9 PK04880



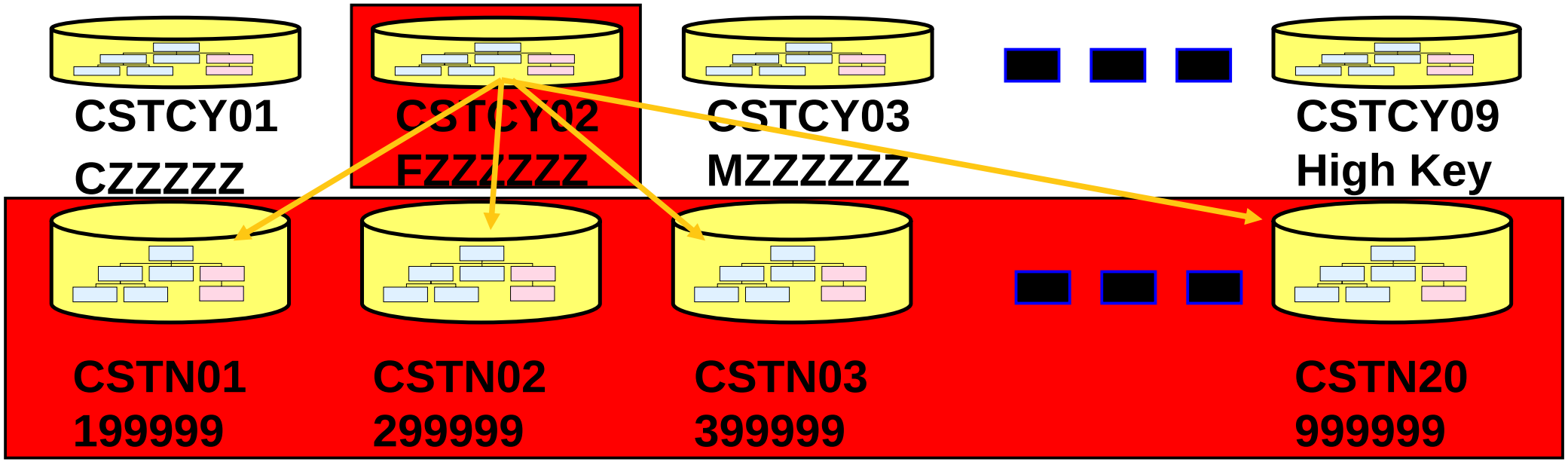
Increased Application Processing

- Processing Partitions Independently
  - Processing is limited to the partition of the secondary index



Increased Application Processing

- Processing Partitions Independantly
  - Source HALDB segments are not limited by the DFSHALDB parm



Why Move to HALDB?

Large Databases

(Removing Size Restrictions)

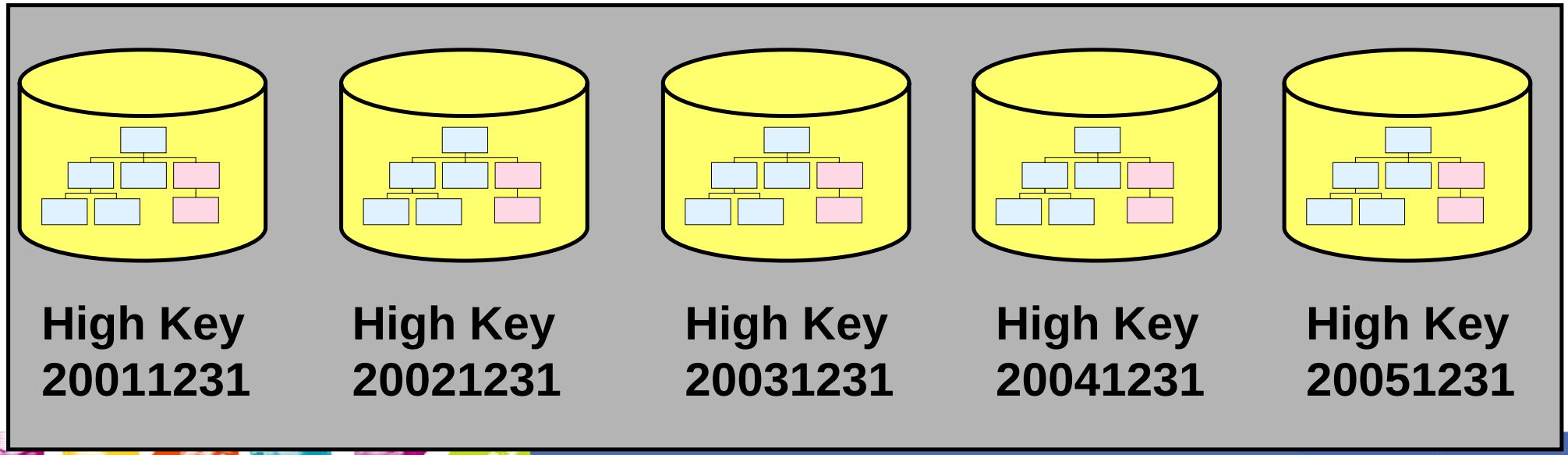
Large Databases

- Removes the 4GB VSAM and 8GB OSAM limits
- Removes the need for data set groups if they were introduced for space reasons
  - 4GB X 10 data sets = 40GBs
  - 4GB X 1001 data sets = 4004GBs (without dataset groups)

Large Databases

- Partitions allows the application to retain more data
  - Historical data retained instead of archiving to a history database

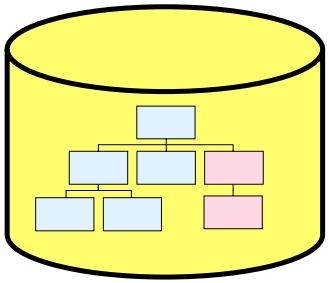
SYR2001 SYR2002 SYR2003 SYR2004 SYR2005



Large Databases

- PHIDAM with ever increasing root key values?
  - Invoice #s, Acct Payable #s,

INV001



High Key
9999999

Large Databases

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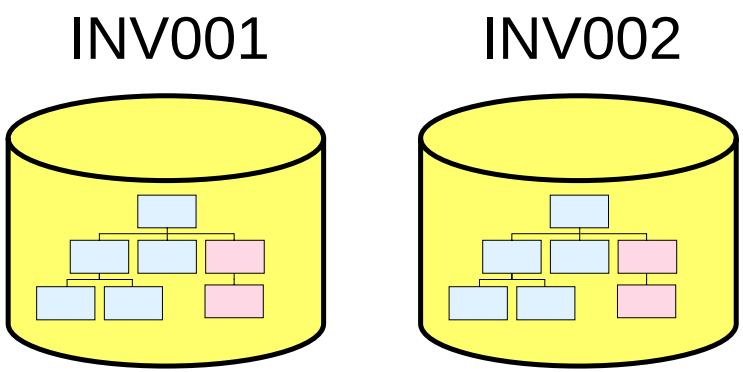
  - Invoice #s, Acct Payable #s,



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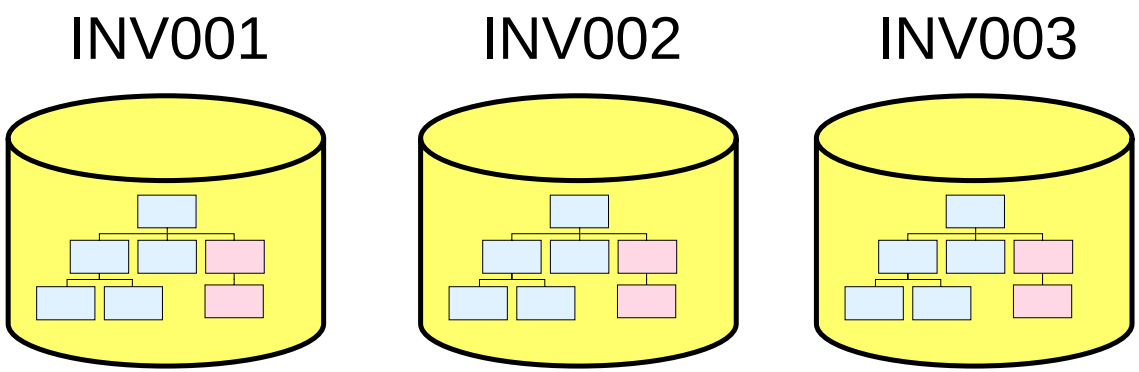

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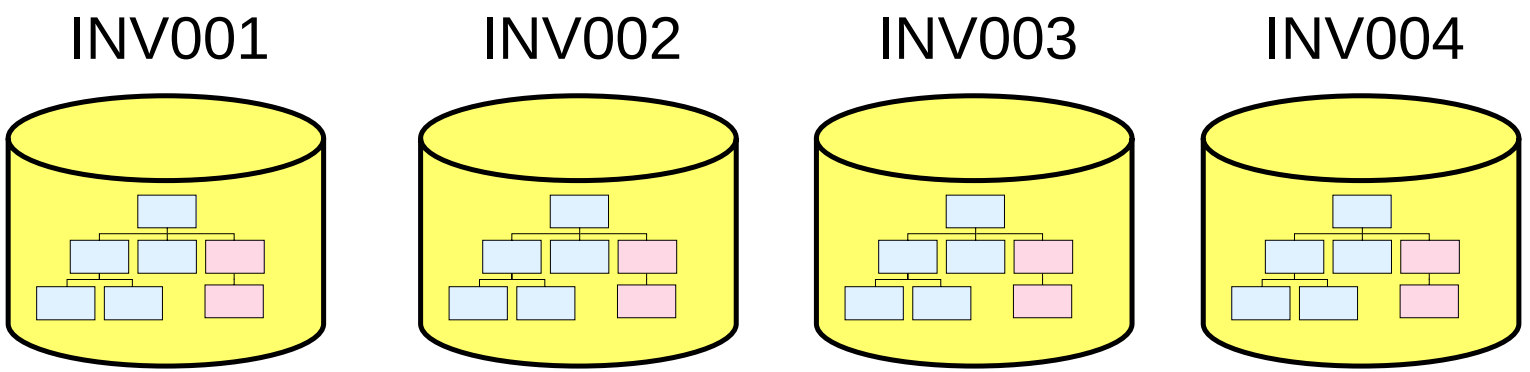
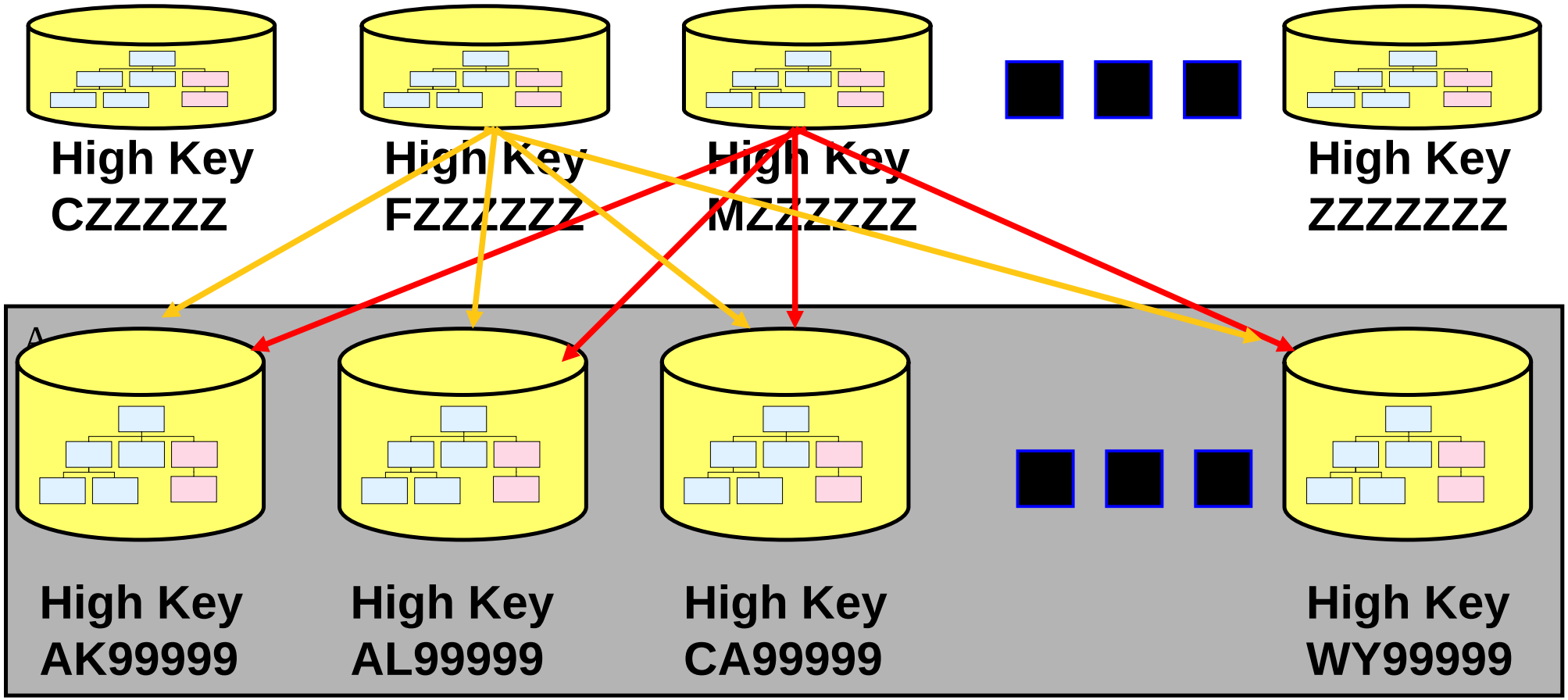


Designing databases for HALDB

Secondary Index independence

- Processing via a secondary index



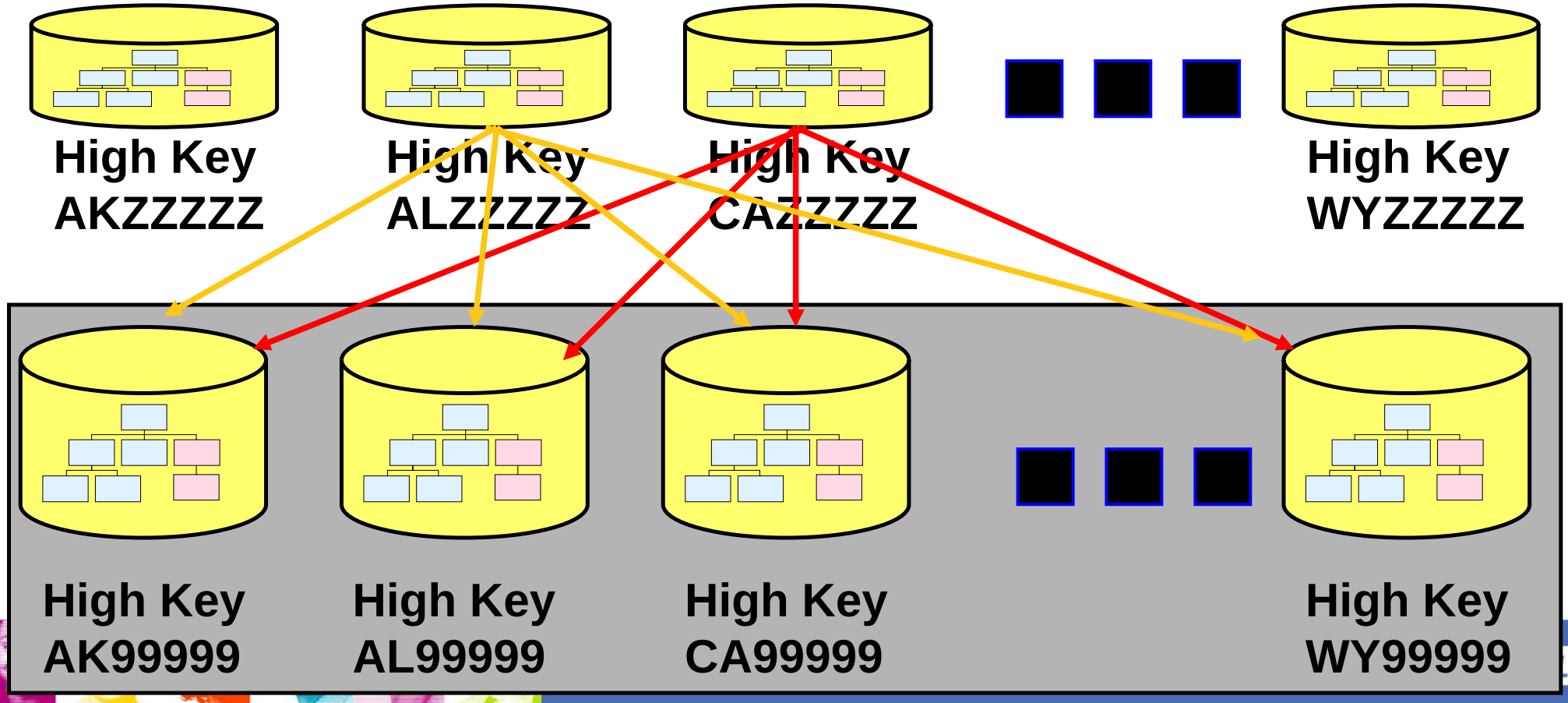
Secondary Index independence

- LCHILD NAME=(CITYINDX,Z1STAY),PTR=INDX
- XDFLD NAME=STATCITY,SRCH=(CITYNAME),SUBSEQ=/SX1

- LCHILD NAME=(CITYINDX,Z1STAY),PTR=INDX
- XDFLD NAME=STATCITY,SRCH=(STATEID,CITYNAME),
  SUBSEQ=/SX1

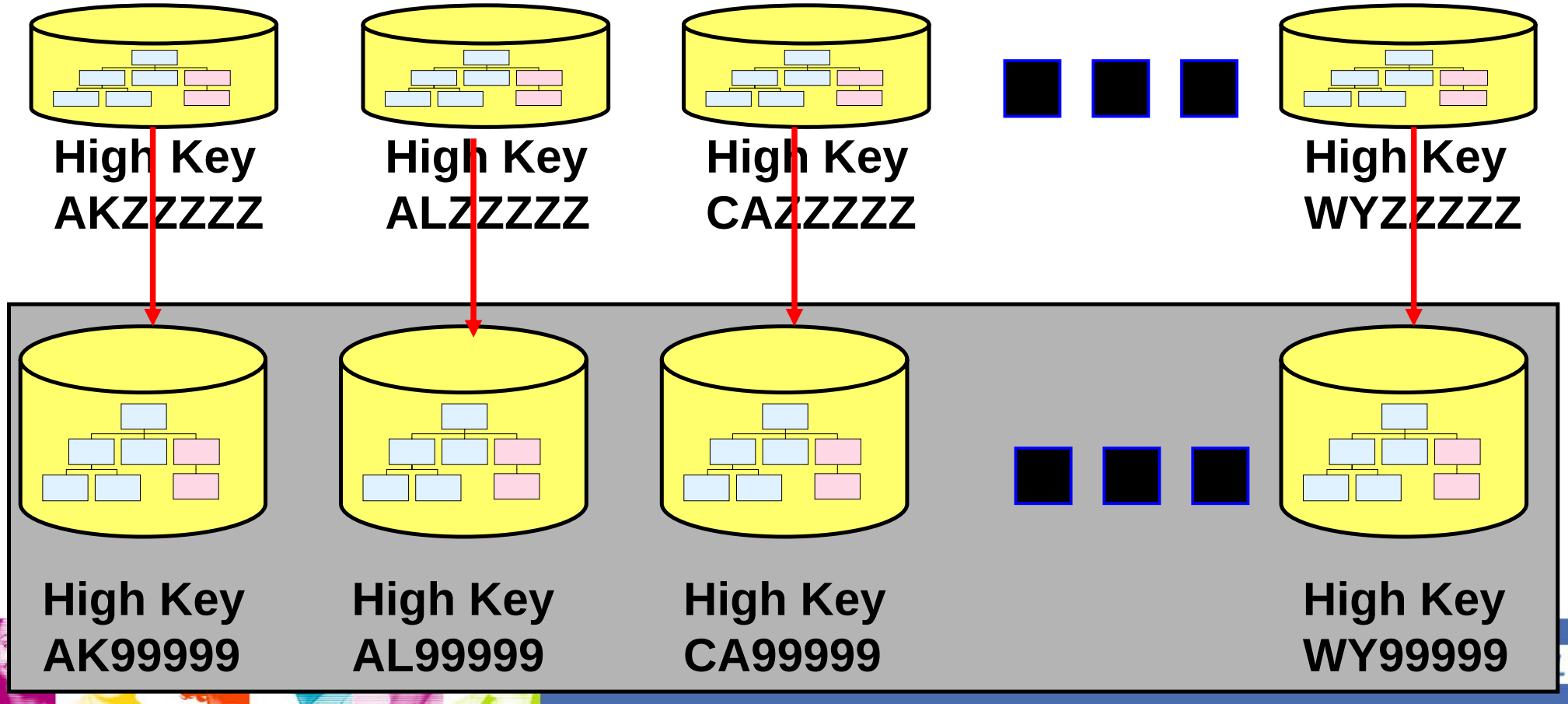
Secondary Index independence

- Partition independence with secondary index processing



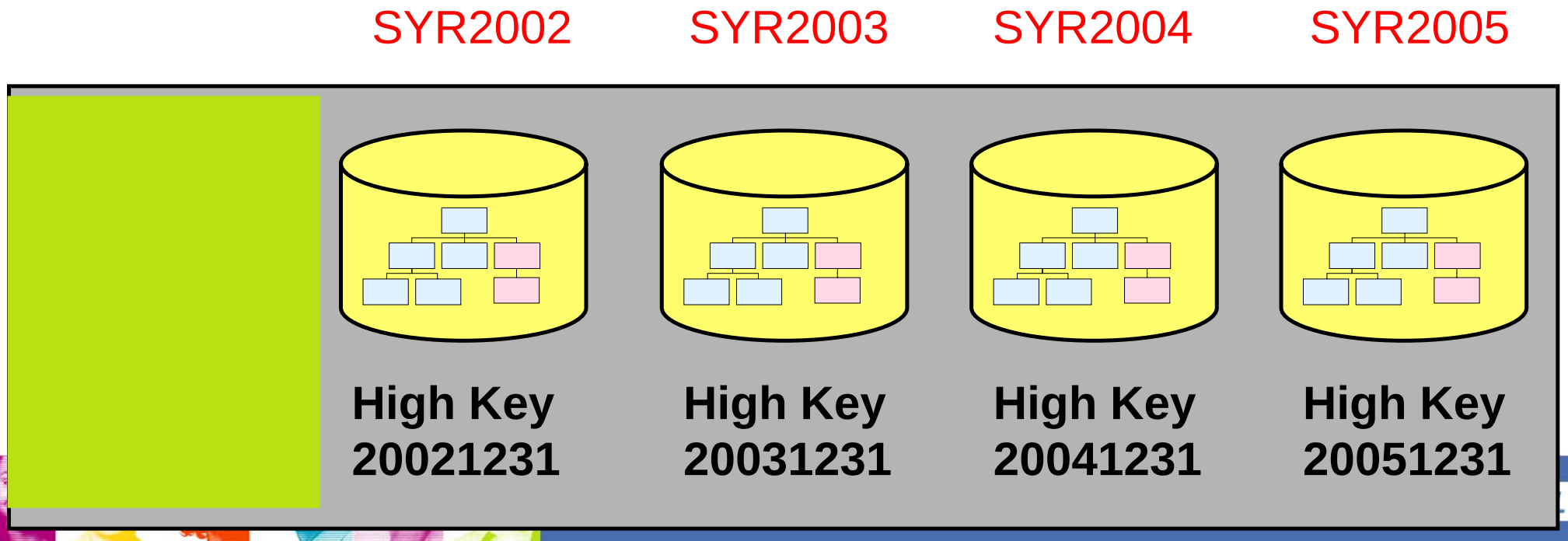
Secondary Index independence

- Partition independence with secondary index processing



Self Deleting Partitions

- Increasing Keys “move new data to right end partitions
- Oldest partitions become obsolete
- DELETE.PART PART(SYR2001)
- Limitation: 1001 partition IDs for the life of the HALDB



Time Dependent Data

- Activity database partitions
  - Partition selection exits works out day of week
  - Allows unload/clean up on “OFF” daysd