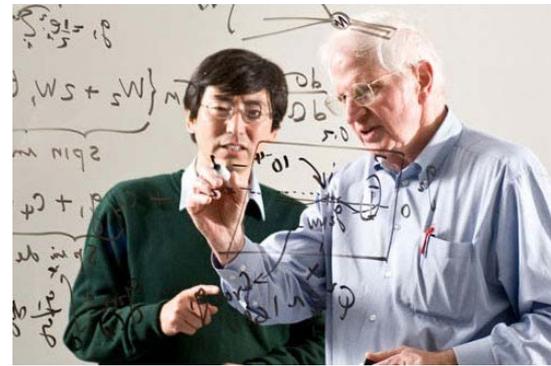# New grouping of IMS regions and workload balancing @ KBC

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Agenda

1. Current IMS systems & Region setup in Production

2. New IMS systems and Region setup in Production

3. Current IMS preloading setup in Production

4. New IMS preloading setup in Production

5. Discussion forum

Before we begin ...

The information presented here only exists in theory.

Nothing of this is implemented and tested in real life yet.

It is how we want to prepare our IMS systems, regions and preloading setup for the future.

Feel free to share your own thoughts and comments with us during or after the presentation.

1. Current IMS systems and Regions setup

LPAR1

IMS1

DB21

LPAR2

IMS2

DB22

data
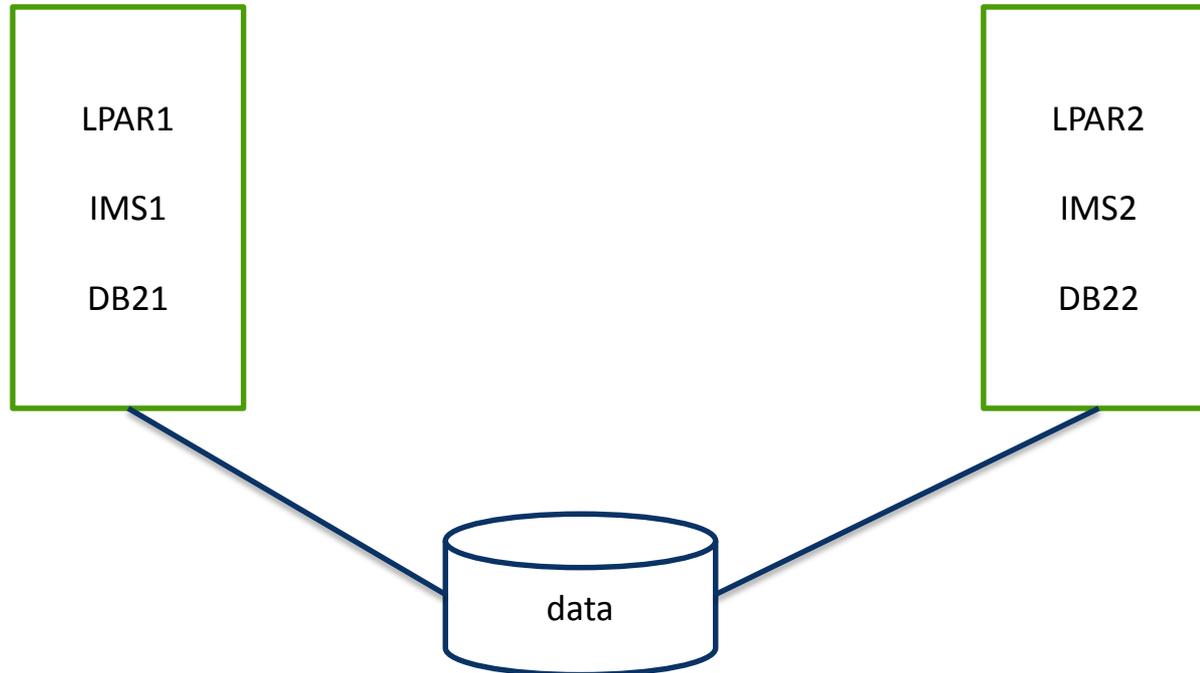
Current IMS systems and Regions setup

- Workload is balanced between the 2 lpars by WLM

- 2 lpars are kept identical as far as possible for DRP/takeover reasons

Current IMS systems and Regions setup

- Regions are divided in groups:

  - Standard workload (normal transactions) NO PWFI

    - No split up: 90 regions/ims

  - Subtop transactions (> 1000000/month) PWFI=Y

    - Office/Head Office: 37 regions /ims

    - Online: 26 regions/ims

  - Top transactions (> 2000000/month) PWFI=Y

    - Office/Head Office: 16 regions/ims

    - Online: 65 regions/ims

Current IMS systems and Regions setup

- Regions are divided in groups (cont):

  - Formule 1 transactions (financial penalty when cut off times are not met)

    - stock exchange order

    - OLTB

    - Rest

    207 regions / ims

- We aim for a region occupancy of 30%

- For subtop transactions: #regions = 75% of sum of MAXRGN

- For top transactions: #regions = sum of MAXRGN

KBC

Current IMS systems and Regions setup

- Every month transactions are moved between the different groups of regions based upon their usage/month

- Regions are added / deleted to met the occupancy goal of 30%

- We see an averige decrease of 40% PGM CPU when moving a transaction to a PWFI=Y region
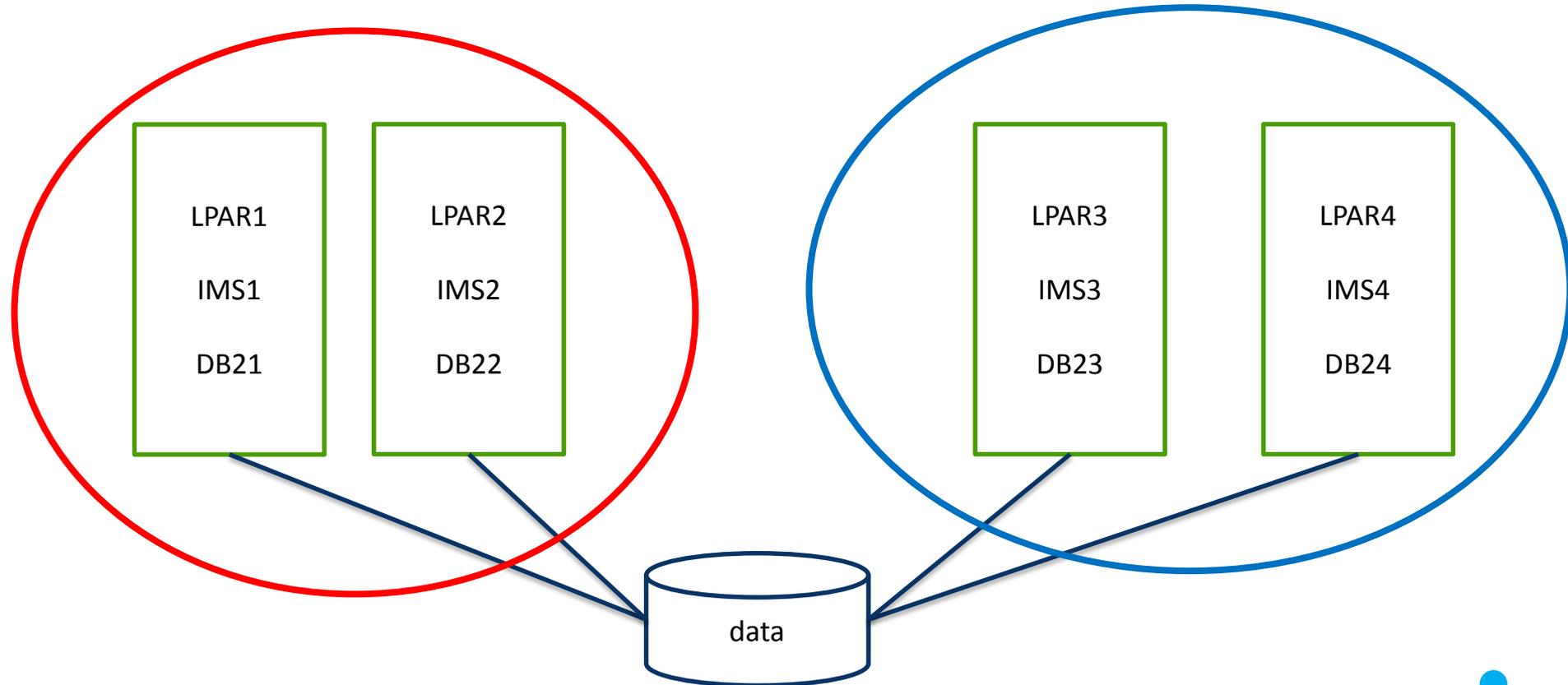
2. New IMS systems and Regions setup

Why?

Separate Online/Mobile workload from traditional workload;

Highly visible to the customers;

Capacity reasons (more easy to give dedicated MIPS to the online LPARs);

2. New IMS systems and Regions setup

2. New IMS systems and Regions setup

- Separate online workload from non online workload;

- No more F1 transactions;

- No longer top and subtop transactions;

- Top transactions are no longer based on # of executions but on the amount of CPU time consumed by the transactions;

  - Goal is to have 90% of the total IMS transaction CPU done by PWFI regions.

Less complex and less regions

2. New IMS systems and Regions setup

- PWFI guidelines

  - When running transactions in PWFI regions, you have to test for initialisation errors.

  - How:

    - In development: all transactions are serial or maxrgn(1) and all regions are PWFi=Y. To detect initialisation error early

    - In acceptance: all transactions are maxrgn(2) and all regions are PWFI=Y. Extra test for initialisation and to test the parallel execution of transactions.

  - This way we can change transactions quicker from non-PWFI to PWFI regions without having to wait for testing in acceptance.

2. New IMS systems and Regions setup

- Migration scenario

  - On the old IMS systems:

    - Define the new regions for the online workload;

    - Move the online transactions to these new regions;

    - Delete the old regions when all the workload is moved.

  - On the new IMS systems:

    - When everything is working on the old systems,

      Start the new regions on the new systems;

      Move the workload to the new systems

  - This all is spread across 3 release weekends.

2. Some discussion items

- Different priority for IMS transactions and how is it managed.

- Region occupancy is now monitored every 10 min. We want to go to a 1 min interval.

- Automatically starting/stopping of extra regions.

3. Current IMS preloading setup

- **Roughly speaking**

  - 1 IMS preload list for all regions over all LPARS

    - 40MB of the most used subroutines/functions;

    - 200 most used main programs (= transactions);

    - Exclude list for programs/functions that are not suitable for preloading;

  - TAD (Tivoly Asset Discovery) is used to gather the figures for the subroutines/functions;

  - FA/F9 records are used to gather the figures for the main programs.

 - Preload list updated every +/- 2 months

4. New IMS preloading setup

- **Why**

  - New IMS systems with different workload;

  - Previous setup dated from a time with less memory on the systems;

  - Is 40 MB still enough? Parameter hasn't changed in years.

  - Should we use different preload lists for the different groups of regions?

  - How about preloading and PWFI?

4. New IMS preloading setup

- How

  - No longer based on fixed size but on number of executions;

  - See if we have enough memory for this approach;

  - Different sets of preload lists for different kind of workload.

4. New IMS preloading setup

Class 50 vanaf 100000 uitvoeringen
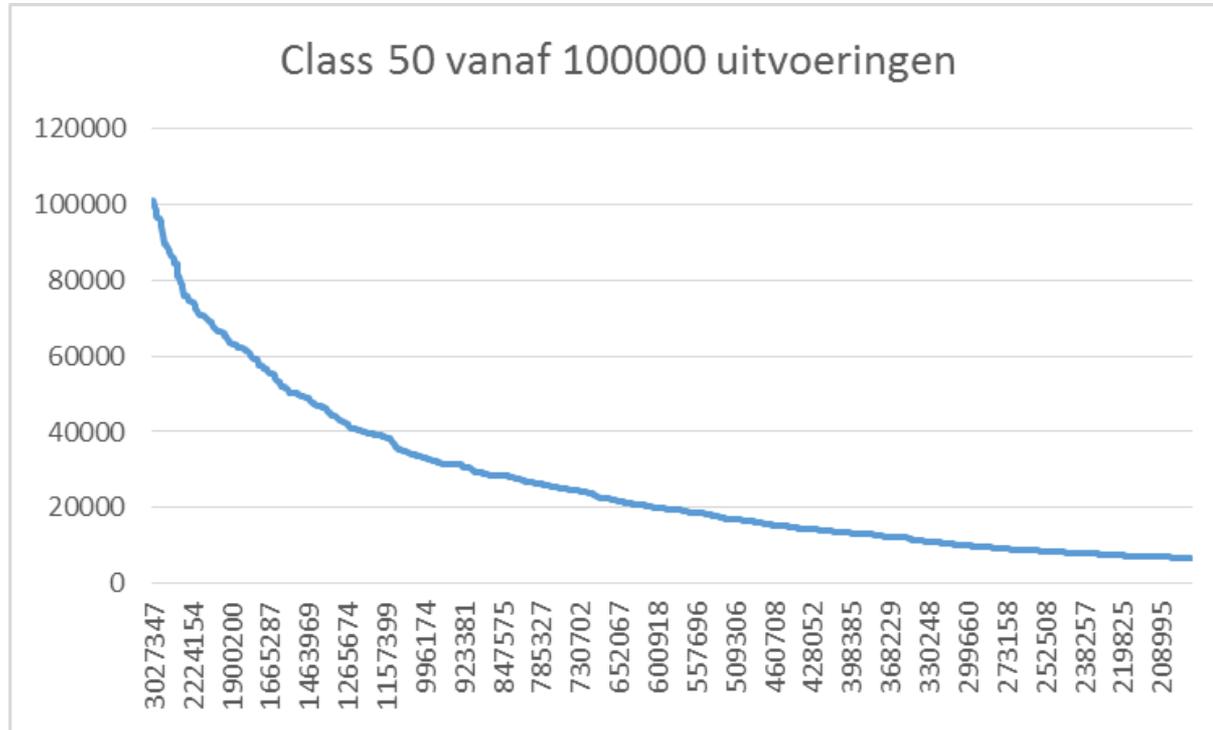
4. New IMS preloading setup

- What do the figures tell us

  - 40 MB is still more than enough (25MB will do the job);

  - Since memory is no issue, we will stick to the 40 MB;

  - To keep everything simple, we will create 1 preload list for the non online and one for the online IMS systems;

  - Do we need preloading for PWFI regions?

4. New IMS preloading setup

- How do we proceed in this

  - 1 set of preload list per type of workload (online versus non online). Definitively!

  - Running tests to see if preloading is necessary for PWFI regions;

  - Determine the limit of counts/day for a program to fit in this 40 MB size.

  - Use this limit to build our future preload list and allow a marging for future lists.

5. Discussion forum

5. Some extra discussion items

- **Migrating to catalog and repository**

  - Planned @KBC. What are the experiences. How are new transactions and programs defined?

- **Migrating from NEON to BMC IMS tools**

  - Ongoing @KBC. What are the experiences i.e. maintenance of the repository, migrating from development to accept to production.

- **IMS and AGILE**

  - Who is allowed to define new IMS resources?