



Virtual IMS user group: Newsletter 78

Welcome to the Virtual IMS user group newsletter. The Virtual IMS user group at itech-ed.com/virtualims is an independently-operated vendor-neutral site run by and for the IMS user community.

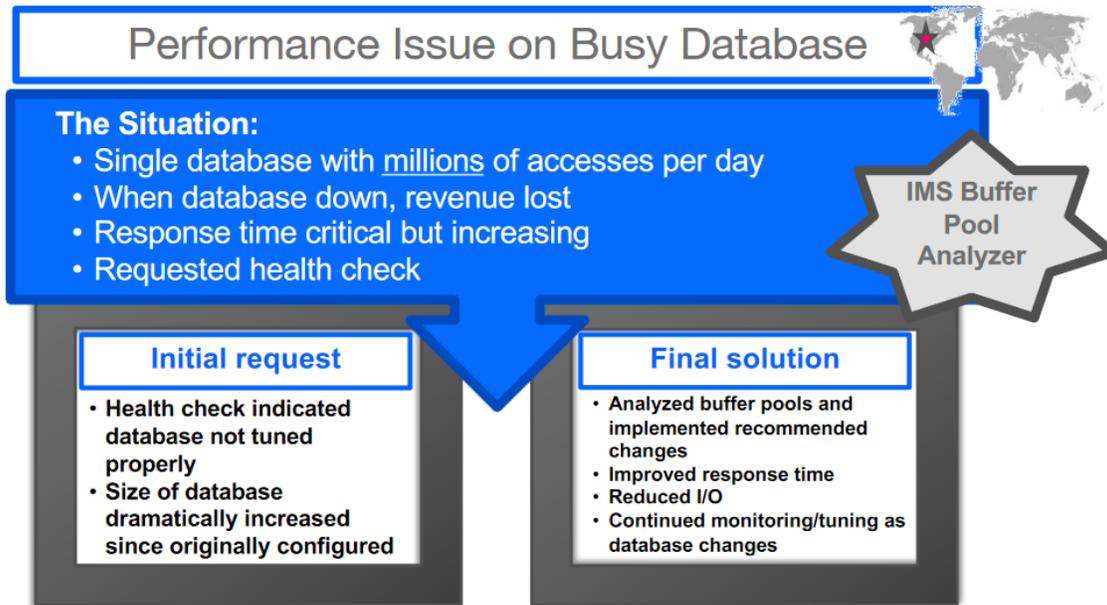


Figure 1: Customer experience

Virtual IMS user group presentation

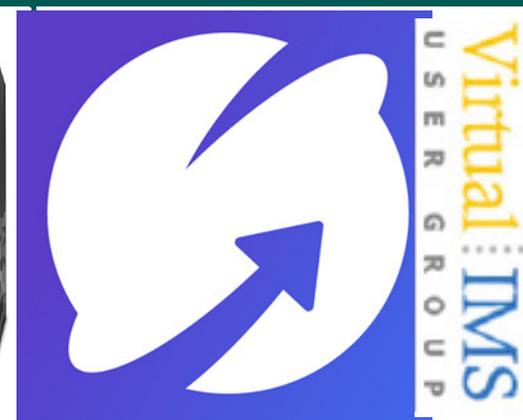
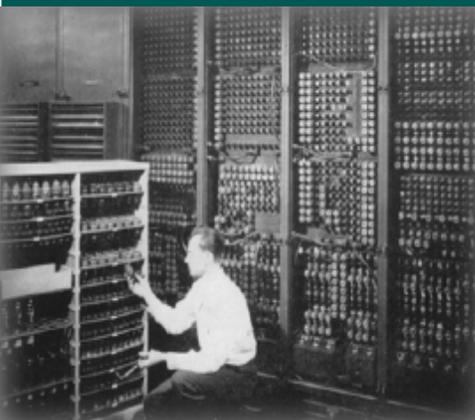
The latest webinar from the Virtual IMS user group was entitled, "Saving CPU time with IMS database administration – Optimize

Workload Performance with IBM IMS Tools". It was presented by Thomas Esser, a Rocket Software zSolutions Architect / Director in EMEA.

Thomas focuses on pre- and post-sales technical

Contents:

Virtual IMS user group presentation	1
Meeting dates	6
IMS articles and blogs	6
IMS news	6
About the Virtual IMS user group	6



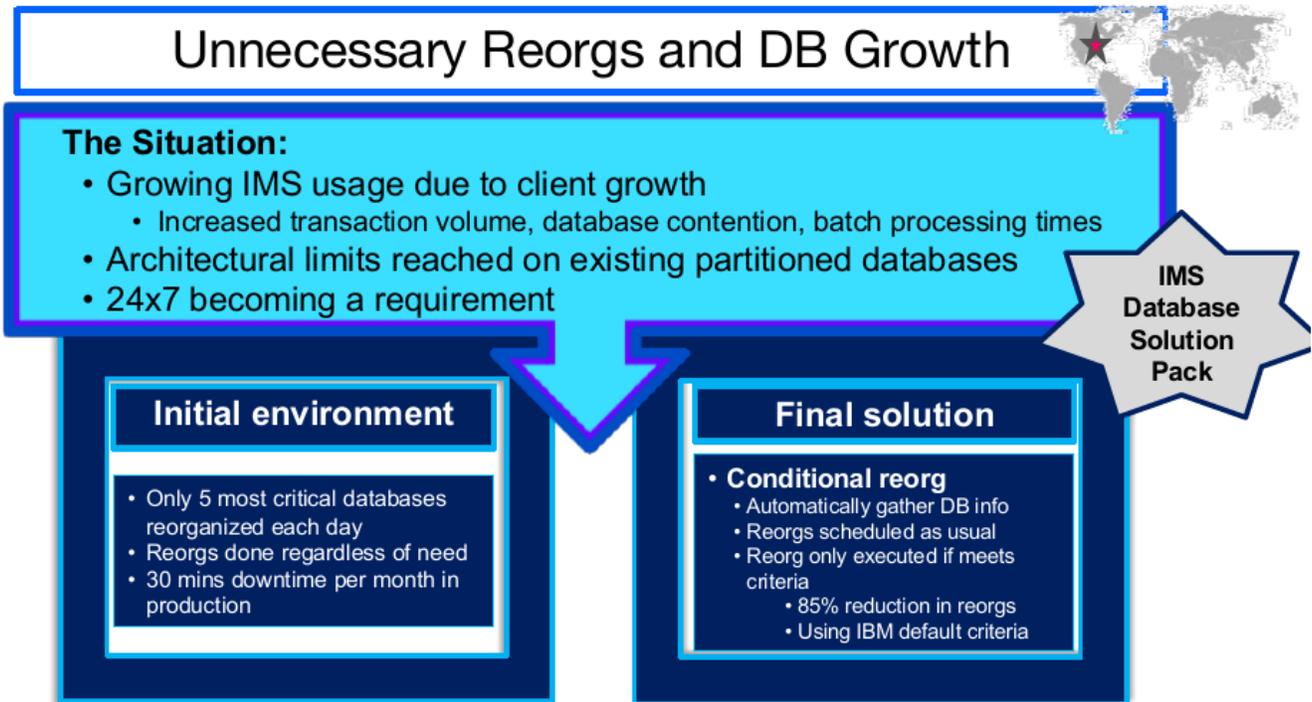


Figure 2: Customer experience

assistance for Z Systems products from IBM.

Previous positions in his professional career have included Compuware, IBM Germany, Precise, BMC Software, and DEVK. He is a regular presenter at GSE and University/High schools, particularly focusing on new IMS and IMS Tools features and their implementation. Thomas has 36 years working with Information Technology and is based in Cologne, Germany.

Thomas Esser started off by looking at performance and efficiency tools that are available to IMS users.

He looked at the efficiency of IMS Tools compared with the

utilities provided by IMS. For example, to reduce MSUs for database maintenance tasks you might use:

- Database unloads. This could be for database reorgs to improve database performance, or to export data for use in other applications or analytics.
- Database load. This could be for a database reorg to improve database performance.
- Database image copy for backups and recovery.
- Index building to improve the efficiency of IMS by rebuilding indexes and fast path secondary indexes. It marks indexes non-

recoverable so IMS can skip logging them.

MSU can also be reduced with zIIP offloads.

The better IMS High Performance Database Tools that are available include:

- Standalone products
 - IBM IMS High Performance Unload for z/OS
 - IBM IMS High Performance Load for z/OS
 - IBM IMS High Performance Image Copy for z/OS
 - IMS Index Builder for z/OS

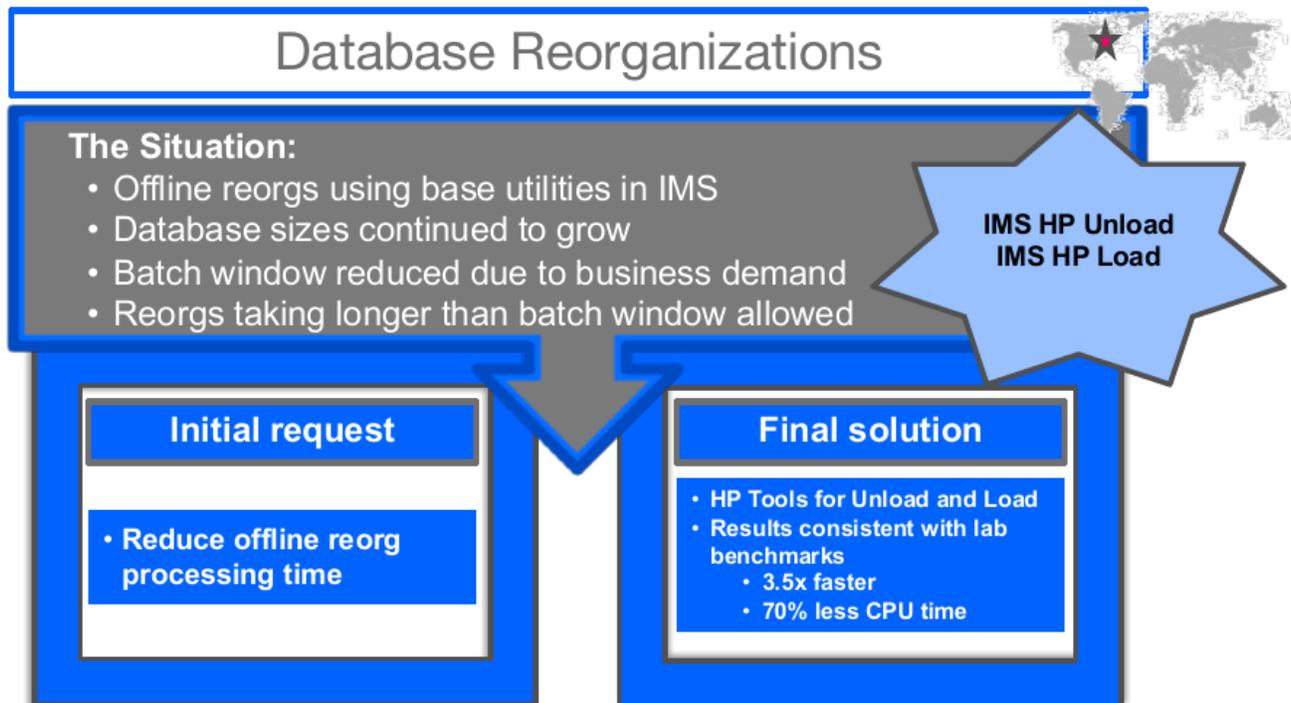


Figure 3: Customer experience

- IMS Database Utility Solution for z/OS for offline reorgs
- IMS Database Solution Pack for z/OS for online reorgs
- IMS Fast Path Solution Pack for z/OS for fast path databases (DEDBs).

For single step IMS database reorganization, IMS DBAs can improve productivity with a single job step. They can reduce MSU consumption with a single job step by avoiding file I/O by each standalone utility, so data is passed in memory between each step. And they can avoid the start-up and shutdown of each job step.

Also, there can be some zIIP offload.

Using IMS Tools, IBM IMS Database Reorganization Expert is available as a standalone product. IMS Database Utility Solution for z/OS is used for offline reorgs. IMS Database Solution Pack for z/OS is used for online reorgs.

When it comes to buffer pool analysis and tuning, unique values improve operational efficiency of databases. They help DBAs easily understand the (in)efficiency of current settings, and recommend new settings to improve the operational efficiency of each database. They are simple enough to use often.

It's important to continue tuning because database characteristics change over time.

IBM IMS Buffer Pool Analyzer for z/OS is available as a standalone product.

For cloning IMS databases, unique values can quickly refresh or create test databases. They can create consistent copies of databases with no database outage. There is no need to the mask data during the cloning process. Fast replication technologies are supported, which reduces MSUs used. It's also possible to offload processing to storage devices. This is more efficient than traditional

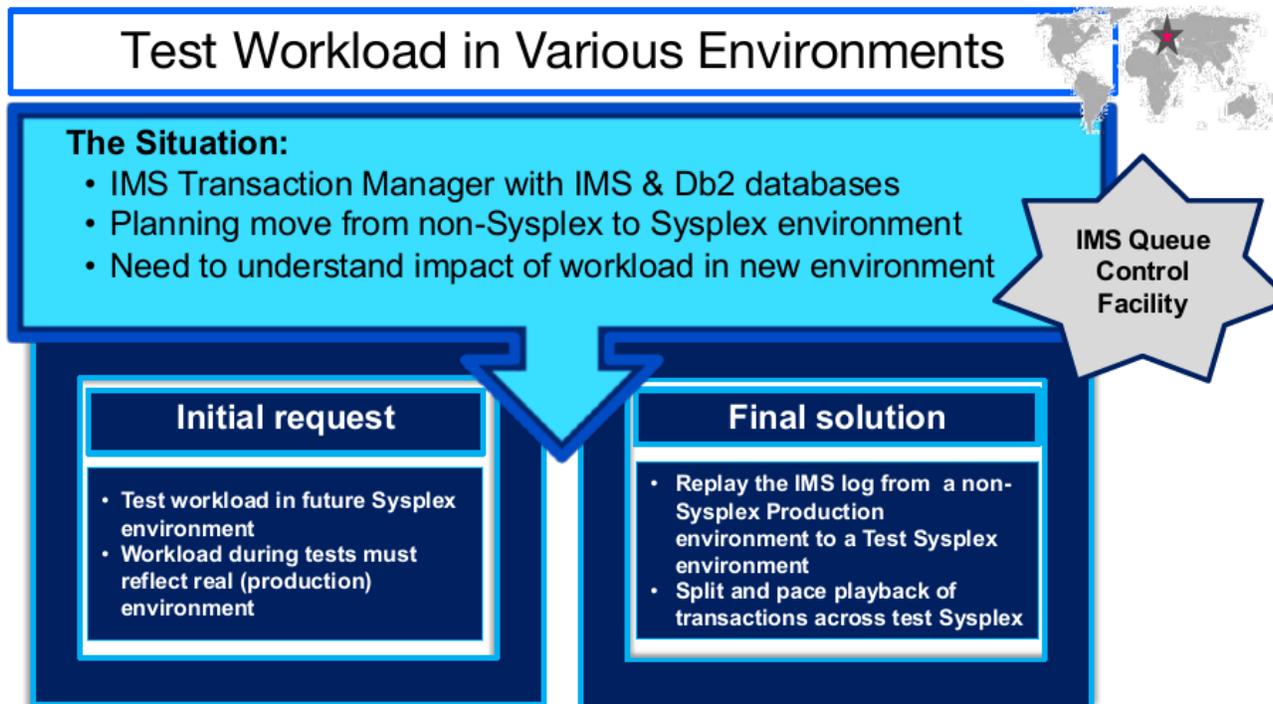


Figure 4: Customer experience

methods such as image copy, recovery, and index rebuild.

Using IMS Tools, the IBM IMS Cloning Tool for z/OS is available as a standalone product.

In terms of task reduction or avoidance, index building is better than taking image copies. It eliminates MSU consumption for backing up database indexes. It avoids image copies of index data sets for full function databases, and fast path secondary index (FPSI) data sets for fast path databases (DEDBs). Instead, during recovery, rebuild indexes for full function databases, and rebuild FPSI for DEDBs if recovering to a previous

point in time. For database reorgs, avoid pointer healing for HALDBs (pointer healing consumes MSUs and prolongs DL/I calls), and clean up FPSI for DEDBs if purging records, etc.

IMS Index Builder for z/OS Tools include IMS Database Utility Solution for z/OS for offline reorgs, IMS Database Solution Pack for z/OS for online reorgs, and IMS Fast Path Solution Pack for z/OS for fast path databases (DEDBs).

With conditional database reorganizations, you can eliminate MSU consumption for database reorganizations that will not add value. With *ad-hoc* scheduling, DBAs schedule database reorgs

based on reports provided by Tools. With a recurring schedule, each database reorg remains in or is added to the schedule. Tools gather characteristics and metrics about each database, then when the reorg is scheduled, data points are analysed to determine whether a reorg will add value. If not, it can be skipped. If it will add value, continue with reorg and report.

Using IMS Tools, IBM IMS Database Reorganization Expert is available as a standalone product. There's IMS Database Utility Solution for z/OS for offline reorgs. IBM IMS Online Reorganization Facility is available. IMS Database

Our website is:

itech-ed.com/virtualims

Solution Pack for z/OS is for online reorgs. IBM IMS Online Expert Reorganization is available. There's IMS Fast Path Solution Pack for z/OS for fast path databases (DEDBs). Customers experienced an 85% reduction in IMS database reorganizations using default criteria provided with the product.

Discussing backup and recovery methodology Thomas suggested that traditional image copies for backup processing (with Tools) used fast replication technologies, which reduced MSU consumption, and offloaded processing to storage devices. There is some zIIP offload. More efficient system-level backup reduced the frequency of image copies for each database, whether that's a full IMS system or data only or multiple IMS systems. The use of fast replication technologies reduced MSU consumption and offloaded processing to storage devices.

IBM IMS Image Copy for z/OS is available standalone. IMS Recovery Solution Pack for z/OS uses all database-related solution packs. IBM

IMS Recovery Expert for z/OS is also available.

Checkpoint processing eliminates MSU consumption for unnecessary application driven checkpoints. These are customer applications written when Z processors were much slower. With faster processors, checkpoints are often taken too frequently, consuming system resources. Tools reduce checkpoint processing based on customer-specified options. The settings are easily updated as Z processors continue to improve and there are no application changes.

The IMS Tool, IBM IMS Program Restart Facility for z/OS is available as a standalone product.

When it comes to reporting and modelling, IMS performance reporting and diagnosis helps with understanding MSU consumption for IMS and IMS Connect. It produces summary and detailed reporting that is highly customizable. There are samples included to help get started. Deep dive analysis by transaction will reveal hot spots or problem areas. It's based on IMS log and IMS Connect Extensions journal. There is minimal SMF data for IMS.

Tools available are IBM IMS Performance Analyzer for z/OS, IBM IMS Problem Investigator for z/OS, and IBM IMS Connect Extensions for z/OS. There's also IMS Performance Solution Pack for z/OS.

IMS users can model and test IMS workloads to understand MSU consumption. They can replay production workloads in a performance test environment that's configured differently. This helps when planning application changes. It's possible to modify the rate of transactions through pacing, and measure the results with performance reporting.

IBM IMS Queue Control Facility for z/OS is available. As is IMS Transaction Manager Solution Pack for z/OS.

Thomas concluded by looking at some customer experiences – see Figures 1, 2, 3, and 4.

A copy of Thomas Esser's presentation is available for download from the Virtual IMS user group Web site at itech-ed.com/virtualims/presentations/IMSSavingCPUtimeApr21.pdf.

You can see and hear the whole user group meeting at <https://youtu.be/nLXDikIwqU>.

Meeting dates

The following meeting dates have been arranged for the Virtual IMS user group:

- On 8 June, Al Saurette, VP Business Development, and Gary Euler, Consultant, at MainTegrity Inc, will be discussing “Making IMS the most secure system on the planet”.
- The following meeting will be on 10 August, when Dougie Lawson will be discussing “From Legacy to Infinity & Beyond”.

IMS articles and blogs

More On IMS Usage by Subhasish Sarkar on The Planet Mainframe website (27 March 2021). You can find the article at <https://www.planetmainframe.com/2021/03/more-on-ims-usage/>

An Introduction to IBM IMS OTMA by Subhasish Sarkar on TechChannel (29 January 2021). You can find the article at <https://techchannel.com/Enterprise/01/2021/introduction-ims-otma>

Understanding IMS OTMA Commit Mode and Synchronization by

Subhasish Sarkar on TechChannel (25 January 2021). You can find the article at <https://techchannel.com/Enterprise/01/2021/understanding-ims-otma-commit-mode>

IMS news

Direct Computer Resources (DCR) has announced that customers still using DataVantage® for IMS version 5.0 will get a free upgrade to release 7.1 because support for the earlier version will end on 31 August. DataVantage for IMS is a mainframe application testing and development software tool. More details can be found at: <https://www.prnewswire.com/news-releases/increased-covid-19-work-from-home-employment-nets-free-software-upgrade-for-datavantage-for-ims-version-5-0-users-301263360.html>

About the Virtual IMS user group

The Virtual IMS user group was established as a way for individuals using IBM's IMS hierarchical database and transaction processing systems to exchange information, learn new techniques, and advance their skills with the product

The Web site at <https://itech-ed.com/virtualims> provides a central point for coordinating periodic meetings (which contain technically-oriented topics presented in a webinar format), and provides articles, discussions, links, and other resources of interest to IBM IMS practitioners. Anyone with an interest in IMS is welcome to join the Virtual IMS user group and share in the knowledge exchange.

To share ideas, and for further information, contact trevor@itech-ed.com.

The Virtual IMS user group is free to its members.