SAP Services We Offer

Last update: 03-25-2010 by MK
Services we offer: SAP solution sizing

Responsible for Sizing Guidelines
Covering the growing complexity of SAP solution landscapes
Conceptual guidance ensuring fulfillment of customer requirements
Fine tuning and tailoring
Teach the Teacher sizing classes
3rd level sizing and configuration support for the field and Business Partners
From SAP application to infrastructure – SAP Sizing
SAP : Insight Tool
IBM Insight for SAP – analyze your SAP system

- Conveniently installed and run
- Provides the customer with complete production topology view of overall Systems
  - Infrastructure Critical performance Data
  - Systems applications level usage data
- Runs independently of Production topology
  - Installs on a spare Windows box connected to the network
  - Negligible impact to running production systems
- Provides cross check to Early Watch Analysis
- Platform Independent.
  - IBM, Sun, HP, Compaq, etc
  - SAP Landscapes
- IT'S FREE!

http://www.ibm.com/erp.sap/insight
IBM Insight for SAP – Charts

**Active Users**

- P10 - Active Users (based on activity within one minute intervals)

**Dialog Steps**

- P10 - Dialog Steps (based on activity within centered, one-hour moving intervals)

**Response Time**

- P10 - Dialog Response Time (based on activity within one minute intervals)

**CPU Time by module**

- FM (9.73%)
- MM (6.13%)
- LE (5.90%)
- OT (15.55%)
- BC (23.54%)
- SO (27.33%)

**CPU Utilization**

**Top Users – CPU Time**

<table>
<thead>
<tr>
<th>Time (s)</th>
<th>%</th>
<th>Steps</th>
<th>Avg (s)</th>
<th>User ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>40406759</td>
<td>84.7</td>
<td>15572</td>
<td>29417.0</td>
<td>ALEREMOTE</td>
</tr>
<tr>
<td>15308489</td>
<td>3.2</td>
<td>27149</td>
<td>56.0</td>
<td>SAPSYS</td>
</tr>
<tr>
<td>13604567</td>
<td>2.9</td>
<td>4009</td>
<td>2777.0</td>
<td>KETTERM</td>
</tr>
<tr>
<td>2635219</td>
<td>0.6</td>
<td>1166</td>
<td>2260.1</td>
<td>HITINIB</td>
</tr>
<tr>
<td>2399460</td>
<td>0.5</td>
<td>5048</td>
<td>457.5</td>
<td>BWRASIS</td>
</tr>
<tr>
<td>2298800</td>
<td>0.5</td>
<td>2082</td>
<td>797.6</td>
<td>GB3755</td>
</tr>
<tr>
<td>1996749</td>
<td>0.4</td>
<td>3796</td>
<td>520.0</td>
<td>ONGAP</td>
</tr>
<tr>
<td>1983340</td>
<td>0.4</td>
<td>50417</td>
<td>39.3</td>
<td>JC1234</td>
</tr>
<tr>
<td>1705659</td>
<td>0.4</td>
<td>3094</td>
<td>550.6</td>
<td>DDIC</td>
</tr>
<tr>
<td>1661590</td>
<td>0.3</td>
<td>2321</td>
<td>715.9</td>
<td>CAP594</td>
</tr>
<tr>
<td>1578730</td>
<td>0.3</td>
<td>295</td>
<td>5351.6</td>
<td>KB0853</td>
</tr>
</tbody>
</table>
SAP platform migrations

Last update: 03-25-2010 by MK
Content

- Definition of SAP migrations
- Migration project phases
- Migration methods
- Unicode migration
Migrations are the entry ticket for a modernized SAP IT infrastructure

- Migrations will
  - generate additional costs
  - need downtime for productive systems
  - need internal resources for testing
  - be an additional risk

- but Migrations will be necessary
  - to use the benefits of a virtualized server platform
  - to lower the database maintenance costs
  - to improve application availability
  - to move away from unsupported platforms
SAP Terminology (1)

- **System Copy**
  - Duplication of an SAP system
  - Certain SAP parameters may change when a system is copied
  - All the instances are newly installed
  - Database set up using a copy of source system database
  - **Homogeneous System Copy**
    - Both operating system & database system stay the same
  - **Heterogeneous System Copy**
    - Migration is a synonym for heterogeneous system copy

- **Unicode Conversion / Migration**
  - SAP system is converted from non-Unicode to Unicode character representation
  - Can be performed as part of a homogeneous or heterogeneous system copy
  - Offers a good window of opportunity for DB Migrations
SAP Terminology (2)

- **Database Reorganization**
  - Should be a regular administrative task
  - Streamline DB layout and structures
    - Reduce fragmentation
    - Improve access times
    - Reduce volume
  - Process
    - Tablespace must be unloaded completely
    - Old tablespace must be dropped
    - New tablespace must be created
    - All tables must be created by import
SAP Migration categories

- Platform Migration
  - exchange of underlying server infrastructure...
  - ...and/or operating systems (not version upgrade)
  - Example: from SUN Fire E15k + Solaris ➔ IBM Power Systems + AIX

- Database Migration
  - exchange of database, hardware stays as is
  - Example: from Oracle to DB2
Content

- Definition of SAP migrations
- Migration project phases
- Migration methods
- Unicode migration
Focus on improvements: AIMS

- In order to meet customers’ business expectations we have to avoid implementation of the as-is status:
  - Analyze the current workload instead of taking given SAPS requirements
  - Implement the IT infrastructure with focus on virtualization and dynamics
  - Reduce risks with proven methodologies and experienced SAP migration experts
  - Make sure that the operational knowledge is transferred to client architects and administrators
OS/DB migration check by SAP

- Mandatory for production systems
- Consists of three service sessions:
  - Remote Project Audit (half-day)
  - Analysis (one day)
  - Verification (one day)
- Delivered by certified consultants through a remote connection
- Key phases in migration project
Typical migration flow for one SAP landscape

1. Development Source → Migration → Development Target → Go Live
   - Development Target → Techn. Test → Funct. Test
   - Development Target → Test
   - Development Target → Funct. Test
   - Development Target → Go Live

2. Production Source → Migration → Production Test → Go Live
   - Production Test → Techn. Test → Funct. Test
   - Production Test → Test
   - Production Test → Funct. Test
   - Production Test → Go Live

3. Production Source → Migration → Production Target → Copy → Quality Assur. Target → Customize → Test → Go Live
   - Quality Assur. Target → Test
   - Quality Assur. Target → Funct. Test
   - Quality Assur. Target → Go Live
Content

- Definition of SAP migrations
- Migration project phases
- Migration methods
- Unicode Migration
# Migration method overview

## SAP „tool based“ methods
- SAP Standard Migration
- Optimized SAP Migration
  - Socket Loader
  - Fast Load
  - Unsorted
- (SAP Minimized Downtime Services aka IMIG)

## Additional methods
- Backup/Restore
- Oracle 10g Transp. TSpaces
  - Oracle DB Tools (O2O)
- XenoBridge Tool
- IBM Hybrid Migration Method
- IBM InfoSphere CDC

### What is best choice?
- DB Size (today in Terabyte range)
- Offline time window (weekend, 2…3 days max)
SAP standard migration

- Sequential Process
- Based on R3Load
- DB-Export to meta-file, then DB-import on target platform
  - Limitation mostly on old source platform
- Slow process (17 GB/h...50 GB/h)
- Table creation on target size with insert operation
- Index creation slow
Optimized SAP migration

- Parallel process
- Use of migration monitor
  - automates sending of dump files to target system
- Start largest tables first
  - their migration defines absolute minimum time
Normal/Optimized via socket loader

- Instead of creating intermediate unload file, uses process pipes
- Requires high network bandwidth > 1GB
- Migration cannot be restarted.
Content

- Definition of SAP migrations
- Migration project phases
- Migration methods
- Unicode Migration
Why Unicode Migrations?

- So far, international SAP implementations maintained several code pages to support multiple languages.
  - „blended codepages“, MDMP (Multi-Display-Multi-Processing) have been a common approach.
  - Complex to maintain
  - expanding business networks ➔ more languages to support
- Starting with ERP 6.0 (NetWeaver 7.0 base) SAP strongly pushes Unicode.
  - Multiple codepages only per exception
  - Not sure, how long SAP will support single/multi codepage systems in future
  - SAP WebAS JAVA stack is Unicode only
- Related SAP Resources at Service Marketplace:
  - SAP Note 857081 „Unicode conversion: downtime estimate“
  - /unicode
  - /unicode@sap
  - /systemcopy → optimization
  - /sizing
Generic Procedure for Unicode Migrations

- Prepare data for upgrade

- Check customer apps for UC support

UCCHECK

Prepare data for upgrade

SPUMG
- Reprocess Log
- Control Table
- Vocabulary

R3load Log

EXPERIMENT
- non Unicode

R3load
- Data

Conversion

IMPORT
- Unicode

R3load

Check customer apps for UC support
Generic Procedure for Unicode Migrations
Time for Questions

Mail contact: isicc@de.ibm.com
Information in this document concerning non-IBM products was obtained from the suppliers of these products or other public sources. Questions on the capabilities of non-IBM products should be addressed to the suppliers of those products.

IBM may have patents or pending patent applications covering subject matter in this document. The furnishing of this document does not give you any license to these patents. Send license inquires, in writing, to IBM Director of Licensing, IBM Corporation, New Castle Drive, Armonk, NY 10504-1785 USA.

All statements regarding IBM future direction and intent are subject to change or withdrawal without notice, and represent goals and objectives only. The information contained in this document has not been submitted to any formal IBM test and is provided “AS IS” with no warranties or guarantees either expressed or implied.

All examples cited or described in this document are presented as illustrations of the manner in which some IBM products can be used and the results that may be achieved. Actual environmental costs and performance characteristics will vary depending on individual client configurations and conditions.

IBM Global Financing offerings are provided through IBM Credit Corporation in the United States and other IBM subsidiaries and divisions worldwide to qualified commercial and government clients. Rates are based on a client's credit rating, financing terms, offering type, equipment type and options, and may vary by country. Other restrictions may apply. Rates and offerings are subject to change, extension or withdrawal without notice. IBM is not responsible for printing errors in this document that result in pricing or information inaccuracies.

All prices shown are IBM's United States suggested list prices and are subject to change without notice; reseller prices may vary. IBM hardware products are manufactured from new parts, or new and serviceable used parts. Regardless, our warranty terms apply. Many of the features described in this document are operating system dependent and may not be available on Linux. For more information, please check: http://www.ibm.com/systems/p/software/whitepapers/linux_overview.html

Any performance data contained in this document was determined in a controlled environment. Actual results may vary significantly and are dependent on many factors including system hardware configuration and software design and configuration. Some measurements quoted in this document may have been made on development-level systems. There is no guarantee these measurements will be the same on generally-available systems. Some measurements quoted in this document may have been estimated through extrapolation. Users of this document should verify the applicable data for their specific environment.

Revised January 19, 2006
Special Notices (Cont.)

The following terms are registered trademarks of International Business Machines Corporation in the United States and/or other countries: AIX, AIX/L, AIX/L(logo), alphaWorks, AS/400, BladeCenter, Blue Gene, Blue Lightning, C Cet++, CICS, CICS/6000, ClusterProven, CT/2, DataHub, DataJoiner, DB2, DEEP BLUE, developerWorks, DirectTalk, Domino, DYNIX, DYNIX/ptx, e business(logo), e(logo)business, e(logo)server, Enterprise Storage Server, ESCON, FlashCopy, GDDM, i5/OS, IBM, IBM(logo), ibm.com, IBM Business Partner (logo), Informix, IntelliStation, IQ-Link, LANStreamer, LoadLeveler, Lotus, Lotus Notes, Lotusphere, Magstar, MediaStreamer, Micro Channel, MQSeries, Net.Data, Netfinity, NetView, Network Station, Notes, NUMA-Q, Operating System/2, Operating System/400, OS/2, OS/390, OS/400, Parallel Sysplex, PartnerLink, PartnerWorld, Passport Advantage, POWERparallel, Power PC 603, Power PC 604, PowerPC, PowerPC(logo), Predictive Failure Analysis, pSeries, PTX, ptx/ADMIN, RETAIN, RISC System/6000, RS/6000, RT Personal Computer, S/390, Scalable POWERparallel Systems, SecureWay, Sequent, ServerProven, SpaceBall, System/390, The Engines of e-business, THINK, Tivoli, Tivoli(logo), Tivoli Management Environment, Tivoli Ready(logo), TME, TotalStorage, TURBOWAYS, VisualAge, WebSphere, xSeries, z/OS, zSeries.


A full list of U.S. trademarks owned by IBM may be found at: http://www.ibm.com/legal/copytrade.shtml.

A full list of trademarks owned by SAP may be found at: http://www.sap.com/company/legal/copyright/trademark.epx

UNIX is a registered trademark in the United States, other countries or both.

Linux is a registered trademark of Linus Torvalds in the United States, other countries or both.

Microsoft, Windows, Windows NT and the Windows logo are trademarks of Microsoft Corporation in the United States, other countries or both.

Intel, Intel Xeon, Itanium and Pentium are trademarks or registered trademarks of Intel Corporation in the United States and/or other countries.

AMD Opteron is a trademark of Advanced Micro Devices, Inc.

Java and all Java-based trademarks and logos are trademarks of Sun Microsystems, Inc. in the United States and/or other countries.

TPC-C and TPC-H are trademarks of the Transaction Performance Processing Council (TPPC).

SPECint, SPECcpu, SPECjbb, SPECweb, SPECjAppServer, SPEC OMP, SPECviewperf, SPECapc, SPECjpc, SPECjvm, SPECmail, SPECimap and SPECsfs are trademarks of the Standard Performance Evaluation Corp (SPEC).

NetBench is a registered trademark of Ziff Davis Media in the United States, other countries or both.

AltiVec is a trademark of Freescale Semiconductor, Inc.

Other company, product and service names may be trademarks or service marks of others.

Revised June 15, 2006