Multiple Components in One Database (MCOD)

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Agenda

- Introducing Multiple Components in One Database (MCOD)
- Simplifying the SAP System Landscape using MCOD
- Example for a Technical Realization
- Availability
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Multiple Components in One Database (MCOD) is a feature in the installation process for SAP NetWeaver based SAP components. It provides the possibility to install several components independently in one single database.

- SAP CRM
- SAP BI
- RDBMS
- SAP R/3 Enterprise
The SAP WebApplication Server which is part of SAP NetWeaver provides a database abstraction layer which shields the application from the database.

- Databases support schema. Tables with the same name can exist independent in different schema with different content.
- The SAP WebAS ensures that a system connects only to the database schema related to the according system.
With SAP WebAS 6.30 a database abstraction layer for the Java stack was introduced – **OpenSQL for Java**

- Tables of the Java stack are stored in the same database instance like the tables of the ABAP stack in two different schema (except Informix)
- The concept of MCOD installations is fully supported by the combined stack of ABAP and Java
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Highly Flexible IT Landscape

**Situation:** N Systems, N Databases

**Benefits**
- Flexibility through components
- Separate upgrades possible
- Different operating systems and databases
- Highest scalability achievable

**Administrative challenges**
- Maintaining different operating systems, databases
- Complicated high availability solutions
- Synchronized backup & restore
Simplification Of The System Landscape With MCOD

Situation: N Systems, 1 Database

Administrative opportunity

- Multiple independent and different software solutions are located in one database
- One logical and physical database instance
- Point in time recovery of semantically related systems e.g. R/3 and CRM possible
- Migration of existing systems is possible
- All systems use the same OS/DB release

Installable on one physical server
Independence Of Single Systems

(De)Installation of individual components

Upgrade of individual components

Data exchange on application level

- Integrity of business data
- No special coding for MCOD installations
- No locking conflicts on database tables
Performance considerations

- Former versions of database systems required an individual parameterization for OLTP and OLAP systems to achieve an optimal performance.
- Latest versions of most databases used for SAP systems allow a combined installation of OLTP and OLAP systems using MCOD*.

- DB2 for IBM zSeries
- DB2 for IBM iSeries
- DB2/UDB for Windows and Unix
- MS SQL Server
- MaxDB
- Oracle
- Informix

Installable on one physical server

* For details see the MCOD homepage
Various Deployment Options

Full range of scalability & flexibility

- Decide how many different systems will reside in one physical database
- Additive sizing approach
Reduced Maintenance & Operating Costs

Benefits detail: Estimated savings

- 10% of disk space
  - Disk
  - For example, tapes, tape drives, disk systems
- 30% of hardware backup costs
- 40% of operating costs
  - Backup administration or high-availability concepts

Only need to administer one database

- Similar effort compared to maintain one component on one database

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Sizing & Administration of an MCOD installation

- The total sizing of an MCOD installation can be achieved by an additive sizing approach of the appropriate values of the single systems

Example: Combined installation of System1 and System2 using MCOD

<table>
<thead>
<tr>
<th></th>
<th>System 1</th>
<th>System 2</th>
<th>MCOD Installation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Users</td>
<td>300</td>
<td>500</td>
<td>800</td>
</tr>
<tr>
<td>SAPS</td>
<td>1500</td>
<td>2000</td>
<td>3500</td>
</tr>
<tr>
<td>DB Size [GByte]</td>
<td>400</td>
<td>500</td>
<td>900</td>
</tr>
</tbody>
</table>

- Decide which systems to combine to achieve a maximum of savings in administration and system handling while keeping the flexibility of the complete installation
System Recommendations

Combination of systems with semantically related data like R/3 and CRM.

Combination of systems of the same type e.g. combination of development systems or combination of production systems.

| Development System 1 ... Development System N |
| Test System 1... Test System N |
| Production System 1 ... Production System N |

The combination of production and non production systems is not supported.
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Implementation On MaxDB

Technical Implementation:

- One database instance will contain the data of all systems

- Each SAP system will create its own database schema / database user sap<sapsystemname> all other resources within the database are shared (catalog, devspaces,caches,...)
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What will be supported

- MCOD is available on all OS/DB platforms supported by SAP
- General Availability since 1st of July, 2002
- For the future all upcoming components of the Mysap Business Suite are planned to be enabled for an MCOD installation
- Information about the current available components is updated regularly and can be found at the service market place under the quicklink MCOD

More information

- http://service.sap.com/mcod
### Available Components

<table>
<thead>
<tr>
<th>OLTP like components</th>
<th>OLAP like components</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAP WebAS 6.10 and higher</td>
<td>SAP BW 3.0A and higher</td>
</tr>
<tr>
<td>SAP R/3 4.6C SR2</td>
<td>SAP SEM 3.1A and higher</td>
</tr>
<tr>
<td>SAP R/3 Enterprise</td>
<td></td>
</tr>
<tr>
<td>SAP Workplace 2.11 SR1</td>
<td></td>
</tr>
<tr>
<td>SAP CRM 2.0C SR1 and higher</td>
<td></td>
</tr>
<tr>
<td>SAP EBP 2.0C SR1 and higher</td>
<td></td>
</tr>
<tr>
<td>SAP SRM 2.0 and higher</td>
<td></td>
</tr>
<tr>
<td>SAP SCM 4.0* and higher</td>
<td>SAP SCM 4.0* and higher</td>
</tr>
<tr>
<td>SAP Knowledge Warehouse 5.0 and higher</td>
<td>SAP NetWeaver 04*</td>
</tr>
<tr>
<td>SAP NetWeaver 04*</td>
<td></td>
</tr>
</tbody>
</table>

* Database setup depending on the main operational area
Main advantages are

- Full flexibility and independence of the installed components
- Simplified administration, backup and recovery
- Additive sizing approach
- System spanning data consistency
- Reduced maintenance and operating costs

With “Multiple Components in One Database” SAP offers a powerful option to install several mySAP components in one physical database.
More Information

Visit the MCOD homepage:  
http://service.sap.com/mcod

Visit the SAP NetWeaver homepage:  
http://service.sap.com/netweaver
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