The Microsoft Enterprise Project Management System
Choosing the right hardware and software for Microsoft EPM 2010

The details below document the hardware and software system requirements for the 2010 version of the Microsoft Enterprise Project Management (EPM). Guidance is provided for choosing the hardware for each stage of the system’s evolution, for running system test scenarios for the go-live phase and for the software licenses necessary for system users.

A Microsoft EPM system is comprised of an SQL database server (versions 2005, 2008 or 2008 R2) and an application server which will be used to run the application level of Microsoft Project Server 2010. Various architecture scenarios are available and the one you choose will depend on several factors including the number of end users involved and the levels of resilience and performance your business environment requires.

The following installation details are based on what is known as the “two server scenario.” This scenario covers about 80% of use cases and, depending on the server’s performance, can support up to 1000 users on the system.

Hardware requirements for virtual servers
There are two types of servers that can be used to run your Microsoft EPM system- physical or virtual. With virtual servers, however, performance is very dependent on the host systems. A mixed architecture, in which the EPM system’s application layer runs on a virtual and the database part on a high-performance, hardware-based server, is also an option.

Hardware requirements for a physical box
Production system with up to 1000 users
Based on our experience with these systems, we can recommend the following hardware as a physical box to support a high-performance Microsoft EPM system in production:

<table>
<thead>
<tr>
<th>Function</th>
<th>Hardware</th>
<th>Processor</th>
<th>RAM</th>
<th>Hard disk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application server</td>
<td>HP DL 380 G6/G7</td>
<td>2 x quad core 2 GHz</td>
<td>16 GB</td>
<td>146 GB</td>
</tr>
<tr>
<td>Database server</td>
<td>HP DL 380 G6/G7</td>
<td>2 x quad core 2 GHz</td>
<td>32 GB</td>
<td>146 GB + SAN</td>
</tr>
</tbody>
</table>

Production system with up to 200 users
For a production system with low to medium-level requirements, we recommend the following equipment:

Microsoft EPM is an enterprise wide solution for project management. As a platform for planning, information, and communication that spans multiple projects and departments, it enables you to better plan and supervise projects; centralize the management of resources; and perform sophisticated reporting.

The platform is based on Microsoft Project Professional, Microsoft Project Server, and Project Web Access / Web App in the versions 2003 and 2007.

The new version 2010 now also provides an integrated system for demand and portfolio management.
### Test and integration system (optional)

The hardware required for a test and integration system will depend on the businesses requirements, but the production system recommendations mentioned above are a good guideline.

### Scalability

As with previous Microsoft EPM versions, there is no need to worry about scalability with Microsoft EPM 2010. The system is designed to grow along with increasing or changing requirements. Future requirements concerning resilience and high availability are no obstacle either. For example, a second application server can be added to a load balanced cluster at any time.

### Phased deployment of Microsoft EPM 2010

Based on our experience with multiple implementations, we recommend planning the deployment of your Microsoft EPM hardware using the following steps.

#### Step 1 – Hardware for the Pilot System

Start by running a pilot system using only a few project managers and their teams. This will allow for necessary tweaks within the system by the technical staff, either external consultants or your in-house specialists, so they can adapt the system and configure it to suit the pilot users’ needs.

As a note, a pilot installation can run on both virtualized and physical servers.

#### Hardware for a pilot system

For a small pilot we recommend a “one box” solution. Here, the Microsoft Project Server 2010 runs on the same physical or virtual machine as the SQL Server 2005, 2008 or 2008 R2.

#### Step 2 – Hardware for the Production and Integration System

While the pilot phase is running successfully, the IT staff prepares the production system behind the scenes. We recommend setting up a test and integration system to run simultaneously alongside the production system. This can be us to execute and test any

<table>
<thead>
<tr>
<th>Function</th>
<th>Hardware</th>
<th>Processor</th>
<th>RAM</th>
<th>Hard disk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application server</td>
<td>virtual</td>
<td>Dual core</td>
<td>8 GB</td>
<td>80 GB</td>
</tr>
<tr>
<td>Database server</td>
<td>virtual</td>
<td>Dual core</td>
<td>16 GB</td>
<td>80 + 160 GB</td>
</tr>
<tr>
<td>Host for virtual systems</td>
<td>HP DL 380 G6</td>
<td>2 x quad core 3 GHz</td>
<td>32GB</td>
<td>2 TB</td>
</tr>
</tbody>
</table>
relevant development activities, to update installations and to rollout packages before the production system goes live.

To ensure there is a representative set of data in the test system, set up a database dump from the pilot system or from the production system once it has gone live.

Once your test and integration system is ready, you can set up your production system in the same way.

**Expert’s tip**
Always make sure that the test and integration system is used purely as a development system with no productive function at all. Otherwise, you may risk mixing up test and production data.

**Test and Integration system**

**Hardware for test and integration system**
We recommend that you run your test and integration system on a physical server. Depending on the processing loads you’re expecting, you could run several servers in a farm with net load balancing.

**Production system**

**Hardware for production system**
We recommend that you set up your production system with a redundant test and integration system running alongside it. That way, you can reduce the risk of update and patch testing to a minimum. Depending on the processing loads you’re expecting, you could run several servers in a farm with net load balancing.
Expert’s tip
We recommend that you run a test and integration environment alongside your EPM production system. It will enable you to test updates while the production system is running without putting it at risk. The same goes for backup and restore scenarios.

Step 3 – Go-live
Once the pilot phase has been completed successfully, the production system can be rolled out enterprise-wide. It is vital to do this in several steps.

First, run a test migration onto the test system – or even onto the production system. This will not be risking the data by doing this, as neither the test nor the production system is live yet. During the test migration, it is important to keep track of how long the transfer takes, as well as, any adjustments (such as renaming URLs etc.).

Next is start planning the actual cutover. The higher the number of users affected during this, the higher the level of risk. Please note that it is not possible to change over users’ systems in a phased approach – all users need to change over at one time.

Note: The 3-step procedure described above also works for earlier versions of Microsoft EPM (2003 and 2007).

A successful go-live requires a huge amount of organization and forward planning. If you have any doubts or questions about how to best perform this within your business environment, The Project Group’s experienced specialists are available to assist with any implementation needs.
Selecting the right software for Microsoft EPM 2010

Having the correct software for a Microsoft EPM integration is just as important as choosing the hardware. Several key software components are required for a successful EPM system build.

Planning of Installation

Coordinating the rollout of Microsoft EPM for the first time or updating to newer version is very complex, since many business units are involved and affected. It is essential for all business units to work together and communicate clearly since many technical and project details are involved. The IT team is responsible for the technical aspects such as hardware, software, installation, upgrade, rollout, while the project management side provides insight on all specialized queries and processes. Finally, the executive staff is necessary to define the objectives of the rollout or upgrade and, of course, the end users.

General planning is the key to success. Do not start the project until the planning is done and all essential questions have been answered. Here are several questions to consider while planning the installation:
- Is the necessary hardware available by the installation date?
- Are all required client and server licenses available?
- Which languages should be available?
- How are the client components distributed? Are they rolled out by script? How long does it take to organize a rollout package? Is a terminal server solution not better?
- What patch level is installed? How often does it need to be updated?
- What license and support agreements exist with Microsoft?
- Is the complexity intentional? Should I perhaps consult an experienced partner for the installation and configuration of the solution? That could save the project from possible technical and economic failure.

Software List

Various components are necessary for rolling out a Microsoft EPM solution. We recommend structuring all sources in advances (e.g. within a directory structure) in order to create a list of software. This method will help identify any missing components.

<table>
<thead>
<tr>
<th>Software</th>
<th>Bit</th>
<th>Language</th>
</tr>
</thead>
<tbody>
<tr>
<td>Windows Server R2</td>
<td>64 bit</td>
<td>English</td>
</tr>
<tr>
<td>SQL Server Standard 2008 R2</td>
<td>64 bit</td>
<td>English</td>
</tr>
<tr>
<td>Project Server 2010</td>
<td>64 bit</td>
<td>English</td>
</tr>
<tr>
<td>MS Sharepoint Server 2010 (incl. Enterprise Key)</td>
<td>64 bit</td>
<td>English</td>
</tr>
<tr>
<td>SharePoint Foundation Language Pack</td>
<td>64 bit</td>
<td>language x</td>
</tr>
<tr>
<td>SharePoint Server Language Pack 2010</td>
<td>64 bit</td>
<td>language x</td>
</tr>
<tr>
<td>Project Professional 2010</td>
<td>32 bit</td>
<td>English</td>
</tr>
<tr>
<td>Project SP1</td>
<td>32 bit</td>
<td>English</td>
</tr>
</tbody>
</table>

Table 1: List of the necessary software components
Note: A detailed installation log for every server farm is indispensable. All necessary changes to the configuration and technical information must be documented there. Doing this ensures the individual installation steps can later be recreated. Every change or adjustment to the system should be documented in a change log.

**Purchasing Licenses**

It is not always clear whether there is already an existing agreement with Microsoft, which licenses are needed and the quantity of each license. To answer these questions it is best to work with your Microsoft software specialist.

The following licenses are necessary for a Microsoft EPM 2010 rollout:

- Windows Server 2008 (R2) Standard for every server of the farm
- SQL Server 2008 (R2) Standard for every SQL Server of the farm
- SQL Server CAL (Client Access License) for every user! There is the possibility of acquiring processor licenses. In such case, a server license is required and not any CALs. Only the processor license. The break-even point is approx. 35 CALs.
- Microsoft SharePoint Server 2010 for every SharePoint server of the farm
- Microsoft Project Server 2010 for every instance of Project Server of the farm
- Project Professional 2010 for every Project Professional user (e.g. project manager)
- Project Web App 2010 for every PWA user, who does not have a Project Professional license
- SharePoint 2010 Standard CAL
- SharePoint 2010 Enterprise CAL. Note: the Enterprise CAL does NOT include Standard CAL. Thus, it is necessary to buy both!
- It must be ensured that all licenses are available by the installation date.

**Selecting the Language**

**For servers:**
The installation of Microsoft Project Server 2010 and Microsoft SharePoint Server 2010 can be implemented in many languages. Generally, we recommend installing only the languages that you actually need.

**For clients:**
Project Professional (Fat Client): Here language does not play a role. A properly configured Project Client will always be able to contact the server.

Project Web Access (PWA, Light Client): The languages available for PWA depend on the languages installed on the servers. Every user is able to define the language in PWA on their own using the Internet options.

**Expert’s tip**
We always recommend first installing the system in English natively. Language packs that may be required can be installed subsequently. In general, English systems are easier to maintain, since the analysis is significantly simpler for system problems.
Selecting 64-bit or 32-bit Technology

This question was asked frequently with regard to Microsoft EPM 2007, since it often caused a lot of confusion and uncertainty. With EPM 2010 it is no longer an issue. Microsoft no longer offers 32-bit versions, not even for its recent Windows operating system or for the recent SQL Servers and Microsoft EPM Systems.

The one exception to this is the client components. Products of the MS Office range are still offered in 32-bit and 64-bit technology and can be used even in combined scenarios.

Based on our experience, there is now no reason to avoid using 64-bit components. Microsoft, however, still recommends that preference should be given to the 32-bit version due to fewer compatibility issues in the more complex installations.

Microsoft Update Release Strategy

For Microsoft EPM

Upgrading is a very complex operation, since an unsuccessful upgrade can have serious consequences. That is why we generally recommend performing an upgrade on a test system (independent replication of the productive system) prior to installing on the productive system.

The client upgrades should already be planned before carrying out the server upgrade. The best solution is to organize the rollout package prior to the upgrade. The consequences of upgrading the Project Server are difficult to predict, especially when there are third party tools in use. Therefore, we recommend performing sufficient tests prior to upgrading the productive system.

Expert’s tip

In order to avoid subsequent problems, you should always install the complete Microsoft Office Server service packs or the cumulative updates and not only the offered hotfix components for Microsoft SharePoint and Project Server 2010.

Windows and SQL Server Updates

You should always keep the operating system and the SQL Server up-to-date for security reasons. Installing updates must be planned as well and should be tested sufficiently on a test system.

The information and details above provide an overview of the hardware and software needed for a successful Microsoft EPM 2010 system build and pilot. Along with the correct hardware and software components, it is essential to have a well-documented plan and skilled IT, project management and executive team to fully undertake the time and requirements needed for a system launch.

Do you have any further questions? The experts of TPG The Project Group would be happy to assist and advise you! Call us at 1.800.804.0646 or send us an email (info@theprojectgroup.com).
TPG® The Project Group
World-Leading Know-how and Products for Microsoft Project Simplify Your Daily Work

TPG® The Project Group is an international full-service provider of consulting, products, hosting and training for project management as well as solutions based on Microsoft and SAP technologies. Especially well-known is our flagship-product TPG PSLink®, the world’s leading and SAP certified product integrating Microsoft Project with SAP. The range of software products and services is complemented by public seminars on Microsoft Project for users and administrators and on project management methodologies like the one of the American Project Management Institute (PMI). TPG increases the maturity level of your project management, making a significant contribution to your business success.

Worldwide and in all Industries
TPG’s customers are large and medium-sized companies in all industry sectors. With TPG offices in Germany, Switzerland, Austria, Great Britain, USA and Canada as well as an international network of authorized TPG partners, our products and services are available on all continents.

The headquarter of TPG America, our US branch office, is based out of Jamison, Pennsylvania. Our team stationed on six US and Canada sites comprises certified professionals with ample experience. They are dedicated to serve specifically companies in the North and South America.

TPG UK is based in Golborne, Cheshire. This team serves customers in the United Kingdom as well as in Australia and New Zealand. Our UK experts have wide-ranging experience in Microsoft EPM solutions, especially integrated with SAP.

Helping you get More Value from Microsoft Project
Our products expand the functional options available in Microsoft Project. They are enterprise-wide solutions for project management and multi-project management that make your work easier and more efficient. For details visit www.theprojectgroup.com/products.

Security and Reliability – Now and for Years to Come
You can count on TPG, both now and in the future. We have a very close relationship with Microsoft, a market-leading range of products, internationally-acclaimed expertise, and have made a conscious decision to do without external investors. With TPG you have highly-skilled specialists to help you optimize your solution from requirements discovery to implementation, extending the solution, and support. The benefit for you is reliability and a secure future for your investment.

2011 PARTNER OF THE YEAR
Project and Portfolio Management
Finalist

www.theprojectgroup.com
info@theprojectgroup.com
TPG is a registered trademark in the European Union and in the United States of America.

www.facebook.com/tpg.munich
www.twitter.com/tpg_muc (@tpg_muc)
www.theprojectgroup.com/newsletter

Copyright TPG The Project Group
All rights reserved 05/2012 (v1.1)
International TPG® Offices and Contacts
World-Leading Know-how and Products for Microsoft Project Simplify Your Daily Work

Contact for North and South America
TPG® The Project Group America Inc.
- Headquarter Jamison -
  2500 York Road, Suite 115
  Jamison, PA 18929, USA
  Tel: +1 800 804 0646
  Email: America@theprojectgroup.com

- Office Seattle -
  Bellevue Business Center
  14205 S.E. 36th Street, Suite 100
  PNB 123, Bellevue, WA 98006, USA
  Tel: +1 800 804 0646
  Email: America@theprojectgroup.com

- Office Chicago -
  233 S. Wacker Drive, 84th floor,
  Chicago, IL 60606, USA
  Tel: +1 800 804 0646
  Email: America@theprojectgroup.com

- Office San Francisco -
  101 California Street, Suite 2450,
  San Francisco, CA 94111, USA
  Tel: +1 800 804 0646
  Email: America@theprojectgroup.com

- Office Houston -
  10101 Southwest Freeway, Suite 400,
  Houston, TX 77074, USA
  Tel: +1 800 804 0646
  Email: America@theprojectgroup.com

- Office Canada -
  1200 McGill College Ave., Suite 1100,
  Montreal, QB H3B 4G7, Canada
  Tel: +1 800 804 0646
  Email: America@theprojectgroup.com

Headquarter Germany and worldwide
TPG® The Project Group GmbH
Destouchesstr. 68
80796 Munich, Germany
Tel: +49 89 615 593 30
Email: Info@theprojectgroup.com

Contact for Switzerland
TPG® The Project Group GmbH
Christoph Merian-Ring 11
4153 Reinach/BL
Switzerland
Tel.: +41 61 711 33 11
Email: Switzerland@theprojectgroup.com

Contact for UK, Australia and New Zealand
TPG® The Project Group UK Ltd.
Innovation House, Parkside Business Park,
Golborne, Warrington, Cheshire, WA3 3PY
United Kingdom
Tel: +44 844 335 0368
Email: UK@theprojectgroup.com

Contact for Austria
TPG® The Project Group Austria, CEE GmbH
Mooslackengasse 17
1190 Vienna, Austria
Tel.: +43 1 23060 3145
Email: Austria@theprojectgroup.com