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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:

Function	Hardware	Processor	RAM	Hard disk
Application server	HP DL 380 G6/G7	2 x quad core 2 GHz	16 GB	146 GB
Database server	HP DL 380 G6/G7	2 x quad core 2 GHz	32 GB	146 GB + SAN

Production system with up to 200 users

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

Microsoft Enterprise Project Management

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.

Microsoft Project Server 2010

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Function	Hardware	Processor	RAM	Hard disk
Application server	virtual	Dual core	8 GB	80 GB
Database server	virtual	Dual core	16 GB	80 + 160 GB
Host for virtual systems	HP DL 380 G6	2 x quad core 3 GHz	32GB	2 TB

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.

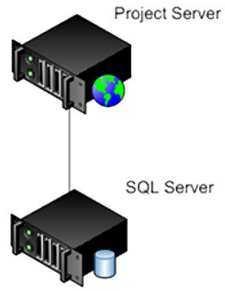
Phased deployment of Microsoft EPM 2010

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

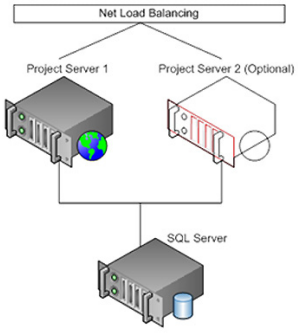
relevant development activities, to update installations and to rollout packages before the production system goes live.

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.

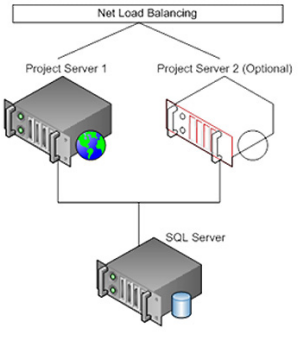
Expert's tip
Always make sure that the test and integration system is used purely as a development system with no productive function at all. Otherwise, you may risk mixing up test and production data.

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

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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.

Software	Bit	Language
Windows Server R2	64 bit	English
SQL Server Standard 2008 R2	64 bit	English
Project Server 2010	64 bit	English
MS Sharepoint Server 2010 (incl. Enterprise Key)	64 bit	English
SharePoint Foundation Language Pack	64 bit	language x
SharePoint Server Language Pack 2010	64 bit	language x
Project Professional 2010	32 bit	English
Project SP1	32 bit	English

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.

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.

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.

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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

IIn 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).

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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.

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