SERENA

SERENA®

Project Portfolio Management

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Overview

Serena Project Portfolio Management is a powerful, integrated portfolio management solution from Serena that helps people in your organization—project managers, portfolio managers, resource managers, team members, executives, and other project stakeholders—make better decisions, which helps to ensure maximum returns on the items your organization chooses to make. Using Project Portfolio Management, an organization can manage the set of entities referred to as a portfolio—applications, projects, product initiatives, resources, and assets—in a manner consistent with the principles of best-in-class business practices. All of this can be accomplished in a single system that integrates, manages, and analyzes enterprise data.

There are two ways to use and deploy Project Portfolio Management in your organization:

- **Serena Project Portfolio Management on-demand** The on-demand version of Project Portfolio Management shares the same set of project management, configuration, and collaboration features as the on-premise version of Project Portfolio Management, including custom reporting, configuration options, and more. Some of the advantages of using the on-demand version of Project Portfolio Management include: using the same features as the on-premise version of Project Portfolio Management, never having to deploy hardware and software, not needing to apply patches or updates, and not needing to perform migrations. On-demand is particularly advantageous for small organizations, such as departmental teams and small businesses. To learn more about the on-demand version of Serena Project Portfolio Management, see http://www.serena.com.

- **Serena Project Portfolio Management on-premise** Larger organizations, those who want to keep their Project Portfolio Management deployment in-house, or , those who use Microsoft Windows Server 2003 technologies like fail-over, clustering, or load-balancing, will want to deploy the on-premise version of Serena Project Portfolio Management. To learn more about how to deploy and configure an on-premise version of Project Portfolio Management, continue reading this guide.

Planning Your Configuration

The goal of configuration planning is to help the IT group, executives, and process owners to select a Project Portfolio Management configuration that meets the needs of the organization. Ultimately, the goal is to provide users with an agreed-upon levels of service as they perform their work, while consuming predictable and maintainable levels of system resources as service is delivered.

An important part of this process is for your organization to identify common usage patterns (including number of users, user roles, and security requirements), estimated data loads and network usage, and average/peak system usage. Use these measurements to help identify the Project Portfolio Management configuration that will work best for your organization.

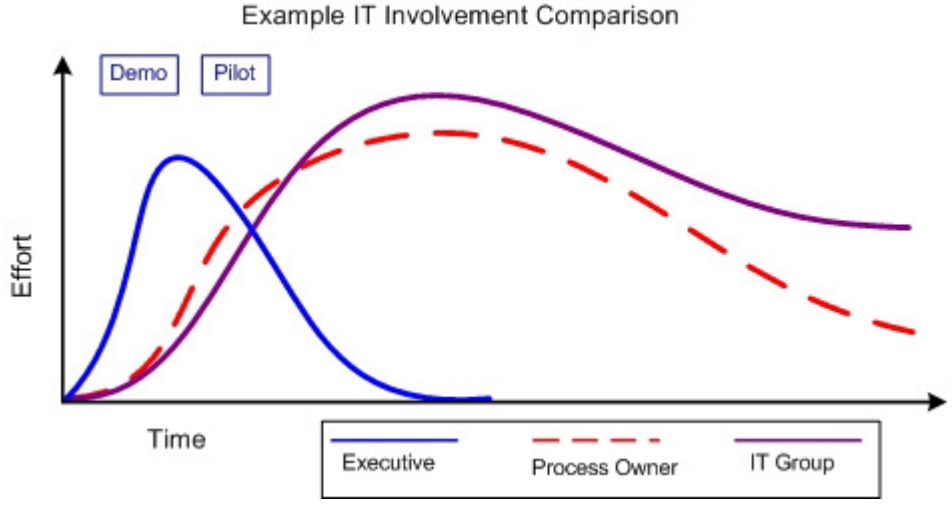
After you have a high-level understanding of what your Project Portfolio Management deployment will look like (who will be using Project Portfolio Management, how often, and when), the next step is to deploy a Project Portfolio Management in a baseline configuration. This baseline configuration (including the baseline hardware pre-requisites) is not intended to be a recommended configuration; rather it represents a starting point in the configuration planning process. It is from this baseline configuration that you will then continue to configure Project Portfolio Management so that it accurately reflects your

organization's work and resource structures, project management style, and data capture and reporting needs. A baseline configuration will evolve into a pilot and then into a production environment that meets your organization's business goals and requirements and into a project management application that everyone in your organization will use.

Involving the IT Group

For many enterprise software deployment processes, such as installing Project Portfolio Management, configuration drivers often come to the information technology (IT) group from outside of IT. Executives and process owners often play a large role in the decision-making process around how Project Portfolio Management should be deployed, including helping to define how Project Portfolio Management will be used to help address specific business needs and how it should be configured so that Project Portfolio Management can be used to help achieve specific business goals.

This kind of top-down decision-making process typically arrives at the IT group in the form of business and technical requirements. The following diagram compares executive, process owner, and IT involvement:



Executives help initiate the process of deploying Project Portfolio Management by driving the vision for what will become an IT implementation project. IT group representatives work with the executives to define the requirements and scope of the deployment and to allocate the budget. The IT group works with process owners to help define project and portfolio management requirements, analyze usage patterns, and to identify business process changes and improvements.

Additionally, the IT group works to define Project Portfolio Management architectural requirements as determined by the performance, capacity, and service level needs of your organization. During this part of the deployment process, Serena Professional Services can arrange a product demonstration that can help show how Project Portfolio Management can most effectively be used to address your organization's planned requirements and goals.

As the deployment path gets closer to a pilot, a test environment, or a small-scale deployment, the IT group will be working closely with process owners to help ensure that Project Portfolio Management is configured to your organization's specific needs. These needs include adding the right items, creating needed custom attributes, defining work and resource breakdown structures, adding custom reports, and so on. Serena

Professional Services can work closely with your organization to help ensure that all of your organization's configuration requirements are met.

Business and Technical Considerations

As your organization is working towards a baseline configuration for Project Portfolio Management, there are several factors that play a part in helping determine what your deployment environment will look like. These factors are not equal (or necessarily stand-alone); their importance can vary widely and there may be factors unique to your organization that are not noted here.

- **Performance** IT groups often have service-level agreements in place for other applications in your organization and these agreements may affect the performance needs (and ultimate hardware configuration) of Project Portfolio Management.
- **Network configuration and topology** Project Portfolio Management processing is distributed across the Web client, application server, and database server. Consequently, network hardware and software configurations and capabilities can have a significant impact on the performance characteristics of your Project Portfolio Management deployment.
- **Project Portfolio Management server processor capabilities** Project Portfolio Management server transactions can be processor-intensive. Faster processor speeds will translate directly into improved performance.
- **Project Portfolio Management software configuration** Project Portfolio Management is highly configurable. This is one of its advantages, but it can also lead to performance issues when a configuration is not implemented in the best way. Serena Professional Services and Serena Support can help your organization configure Project Portfolio Management optimally by reviewing your configuration and by helping to diagnose performance issues.
- **Distributed applications** If your organization has a large number of users, in both the number of individual items and in the number of concurrent users, the best approach is to distribute the dedicated components of Project Portfolio Management (such as the application server and the database server) on to dedicated server hardware.

Project Portfolio Management can be scaled-up and it can be scaled-out. The decision to do either is dependent on several factors, including maintenance costs, hardware budget, and more, such as:

- **WAN capabilities** When Project Portfolio Management is accessed by users over a WAN, consider the geographic location and number of users, as well as the bandwidth, latency, and throughput of the connections these users will be relying on.
- **Existing network infrastructure** Deploying Project Portfolio Management may require upgrades or modifications to existing infrastructure to support the additional bandwidth requirements.
- **Security requirements** Security policies are one of the most important elements of any deployment plan; however, security policies and security-related configurations can effect Project Portfolio Management performance. For example, using SSL can reduce user-perceived response time from the server and it can limit the total number of available connections. Using internal firewalls can also affect performance.

- **Availability** This can be as much a business requirement as a performance requirement. Project Portfolio Management supports load-balancing in a Web farm configuration, which will provide performance benefits and can increase availability in terms of overall concurrency. Depending on the availability requirements, additional hardware may be needed.

- **Maintenance** Maintenance costs are important when considering not only the initial configuration of Project Portfolio Management, but also possible scale-up or scale-out strategies. For example, maintenance costs weigh heavily when considering the use of higher-end hardware, such as a four-processor server instead of a pair of two-processor servers. Hardware decisions need to be balanced against the other capabilities of your organization's network and against the overall performance requirements your organization needs.

- **Cost constraints** Hardware budgets are one of the biggest factors in deployment trade-offs. If a budget does not support the planned configuration, you must modify the plan to fit within the budget. Depending on the hardware purchasing process, you may be able to deploy Project Portfolio Management iteratively to account for purchasing cycles.

Sizing Your Configuration

There are a number of factors that should play a role in how your organization determines the type of hardware you will need to support the size of your Project Portfolio Management deployment, including:

- **Number of users** A user is any person who is licensed to log on to Project Portfolio Management. A full license provides greater potential access to Project Portfolio Management features; a base license offers users only a limited set of functionality. Determining how many users in your organization need to access Project Portfolio Management, what types of licenses they need, and what types of activities these users will need to perform after they have accessed Project Portfolio Management is an important step in the planning process. Larger numbers of users or a larger number of full licensed users translates to greater potential demand from the system. For example, one thousand users will generate greater system load than one hundred; two hundred project managers will typically generate greater system load than thirty. The number of concurrent users is also important.

- **Number of resources** Not all users in Project Portfolio Management are resources. A resource is a licensed user (full or base) that can be allocated to items and can report time against tasks, work items and activities. Resources whose allocations and assignments span multiple portfolios and who submit time or status across portfolios can generate additional system load. Resources should be organized into resource teams. Large resource teams, or a resource pool not organized into teams can negatively impact performance.

- **Number of items** Items are the projects, portfolios, applications, etc. that your organization is working on, tracking, reporting against, and so on. It is important to understand how many items your organization has per year, how many it can have at one time, the size of these items, number of cross-project dependencies, the number of assignments, and so on. Larger items with large resource allocations demand more from the system than smaller, shorter, more simple items.

- **Usage types** It is important to understand how Project Portfolio Management is used, and how that usage correlates to both network traffic and service utilization. Use case scenarios help dictate the type of hardware needed. A Project Portfolio Management deployment that manages thousands of item portfolios may differ greatly in terms of configuration choices from a deployment that supports weekly timesheet submissions for 200 users. Another factor is concurrent usage. The larger number of concurrent users on the system, the greater need for system resources. For example, a 200 user deployment with 120 concurrent users requires more hardware resources than a 200 user deployment with only 20 users accessing Project Portfolio Management at any given time. As noted above, more sophisticated users can generate greater system load simply by leveraging a greater set of Project Portfolio Management functionality. For example, deep portfolio analysis that tracks and calculates timephased data can require more system resources than developing basic task plans.

Besides the number of users, resources, items, and other usage patterns and types, other factors should play a role in how your organization deploys Project Portfolio Management, including incorporating any of your organization's IT policies for databases and application servers. For example, do you need to cluster the database or provide fail-over capabilities? Do Web applications need to be installed in a load-balanced configuration?

- **Scaling up** Scaling up is a strategy of running the Project Portfolio Management components on hardware that exceeds the baseline recommendations contained in this guide, including using faster CPUs, multiple CPUs, more memory, faster network cards, or (more likely) some combination of all of these. This strategy will improve the overall capabilities of your Project Portfolio Management deployment and will improve the overall user experience.

- **Scaling out (load balancing)** Scaling out your Project Portfolio Management deployment will help your organization achieve the highest levels of concurrency and performance. Scaling out using hardware often requires specialized hardware and skills, and will be more expensive. Scaling out using software can be done using the load balancing capabilities of Microsoft Windows Advanced Server 2000 and Windows Server 2003, which can be configured to automatically distribute the load across servers in a farm. When Project Portfolio Management is scaled out, clients will continue to access the system through a single URL and will be unaware of the load balanced configuration.

  An advantage of using this approach is that it scales to meet the growing needs of a Project Portfolio Management deployment. As your organization's requirements increase, additional servers can be added to the load balanced configuration. Three components of Project Portfolio Management can be load-balanced: Project Portfolio Management Web Server, Project Portfolio Management Reports, and Project Portfolio Management Documents Manager (if your organization has offloaded from the Project Portfolio Management Web Server). A load balanced configuration will require careful planning and should be undertaken only by organizations with the appropriate levels of commitment to their IT infrastructure and hardware resources.

- **Clustering and fail-over** You can use the clustering and fail-over capabilities of Windows Server. Similar to load-balancing for the Web-facing servers, clustering and fail-over are ways to provide redundancy to one of the most important elements of your Project Portfolio Management deployment: your data. A clustering or fail-over strategy helps ensure that when users access Project Portfolio Management, they can access the data that is stored in the Project Portfolio Management database. Similar to load balancing, a clustering or fail-over configuration will require careful

planning and should be undertaken only by organizations with the appropriate levels of commitment to their IT infrastructure and hardware resources.

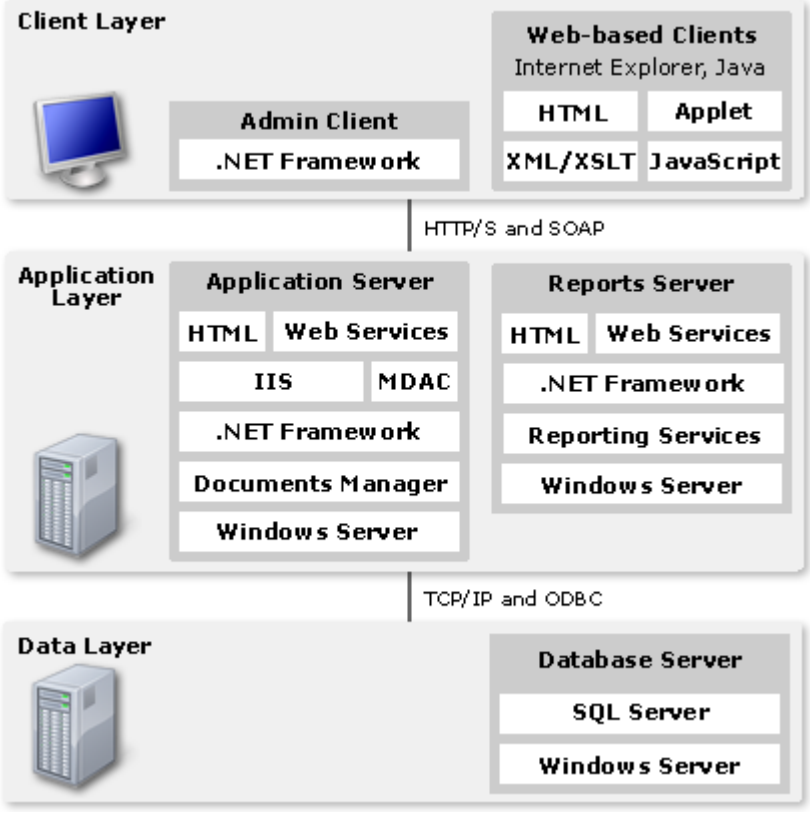
Overview of Server Components

From a hardware and software perspective, Project Portfolio Management has a relatively simple deployment story. Before deploying Project Portfolio Management, you should understand the four components of Project Portfolio Management, how they interact with each other, and what they are used for. As part of this analysis, you should understand the hardware and software requirements for each of the Project Portfolio Management components, and the different configuration options that are available.

Before installing any component of Project Portfolio Management, you should acquire hardware with the appropriate specifications, and then you should install and configure the appropriate version of the Windows Server operating system, SQL Server (and/or SQL Server 2008 R2 Reporting Services), and other software prerequisites (such as components like IIS or ASP.NET) on the computers that will be running the various components of Project Portfolio Management.

Project Portfolio Management has three layers (client, application, and data) and four components (client, application, reports, and database).

For supported platforms for each version of Project Portfolio Management, see the Serena Support Web site at http://support.serena.com/Roadmap/MARINER/MARINER_Supported_Platforms.aspx.



From a configuration perspective, another important part of your deployment strategy includes thorough configuration planning and rigorous testing of that configuration in a

non-production setting. Part of your configuration planning should include understanding your organization's business requirements and processes needed to manage your portfolio. This helps ensure Project Portfolio Management will be configured to address your needs.

Application Server

The Project Portfolio Management application server is the core Project Portfolio Management component in a deployment. Project Portfolio Management uses Microsoft .NET Framework, version 3.5 and leverages many of its enterprise application capabilities, including memory management, database access, and Web services. Project Portfolio Management Services that are used by Project Portfolio Managementapplication server are hosted in Microsoft Internet Information Services (IIS). Project Portfolio Management reports leverage Microsoft SQL Server and SQL Reporting Services, in addition to using Web services.

The Project Portfolio Management application server includes a core set of services that determine how users can to interact with Project Portfolio Management, including:

- **UI Content and Framework Services** These services receive, process, and respond to HTTP requests handled by IIS. This is the primary entry point to Project Portfolio Management for users of the Project Portfolio Management client Web browser.
- **Investment Object Services** These services provide ways to create, retrieve, and modify item objects that are contained in portfolios. Supported actions include performing calculations, allowing users to interact with datasheets, and identifying which item objects are available to a user in Project Portfolio Management.
- **Security Services** This service determines which areas of Project Portfolio Management a user may access based on their permissions, roles, and license.
- **Notification services** Notification services are responsible for processing notification requests, which are sent to users of Project Portfolio Management through email. Notification services require Microsoft Message Queuing (MSMQ), which runs as a local system account at a normal thread priority.
- **Scheduling services** Scheduling services are responsible for starting scheduled jobs in Project Portfolio Management. The service itself runs as a local system account at a normal thread priority.
- **Documents manager** The Project Portfolio Management documents manager provides document storage and management functionality in Project Portfolio Management. For organizations that anticipate a need for a large documents repository, the functionality can be offloaded to a separate server.

Prerequisites: Web Server

In addition to the hardware and software requirements listed in this section, you should review the software configuration prerequisites necessary for a successful deployment.

Category	Minimum Requirement
CPU and **Memory (RAM)**	The speed of the CPU and the amount of RAM will depend on several factors, including the version of Microsoft Windows Server that is used (Windows Server 2003 or Windows Server 2008). In general, you should ensure that the CPU and RAM on the application server exceeds the minimum requirements for the operating system and Microsoft SQL Server. Also, the number of users that your organization will have should be factored in, especially with regards to the application server and the amount of available RAM. The minimum amount of RAM for a small configuration is 2 GB, but 4 GB is suggested. The minimum CPU for a small configuration is a single core Intel 2.5 GHz with hyperthreading, but an Intel Core2 Dual CPU is suggested.
Hard Disk Space	30 GB hard disk space. Project Portfolio Management requires a minimum of 1.0 GB hard disk space for installation.
Operating System	Microsoft Windows Server 2003 or Windows Server 2008. All critical updates. 64-bit or 32-bit versions as appropriate. (Windows Server 2008 is the recommended operating system.)
Internet	Microsoft Internet Information Services (IIS) 6.0 (for Windows Server 2003) or IIS 7.0 (for Windows Server 2008) or IIS 7.5 (for Windows Server 2008 R2); ASP.NET.
Framework	Microsoft .NET Framework 3.5.

Reports

The Project Portfolio Management report server is both a database and application server that provides the reporting functionality of Project Portfolio Management. It requires SQL Server 2008 R2 Reporting Services and access to the Project Portfolio Management database.

Prerequisites: Reports

If your server has sufficient capacity, the Project Portfolio Management Reports Server can be installed on the same computer as the Project Portfolio Management Web server. If you put the Project Portfolio Management Web server and the Project Portfolio Management Reports Server on the same hardware, use the recommended requirements as your organization's sizing baseline.

Category	Minimum Requirement
CPU	The speed of the CPU and the amount of RAM will depend on several factors, including the version of Microsoft Windows Server that is used. In general, you should ensure that the CPU and RAM on the database server exceeds the minimum requirements for the operating system and SQL Server. Also, factor in the number of users that your organization has, especially with regards to the amount of data that your organization will be adding to the database (work items from the application and documents in the documents store). For a small configuration, the minimum amount of RAM is 2 GB, but the suggested amount is 4 GB. The minimum CPU for a small configuration is a single core Intel 2.5 GHz with hyperthreading, but the suggested CPU is an Intel Core2 Dual. For a large configuration, the 64-bit version of Windows Server is suggested, with a minimum of 3 GB RAM and a suggested amount of 8 GB. The minimum processor for a large configuration is an Intel Core2 Dual CPU.
Hard Disk Space	30 GB hard disk space. Project Portfolio Management requires a minimum of 1.0 GB hard disk space for installation.
Operating System	Microsoft Windows Server and all critical updates.
Database	Microsoft SQL Server 2008 R2 Enterprise Edition; Microsoft SQL Server 2008 R2 Reporting Services.
Framework	Microsoft .NET Framework 3.5.

Database

Project Portfolio Management uses a SQL Server database server to store and protect portfolio data. Access to the repository is accomplished exclusively through an API defined for and used by the Project Portfolio Management application; direct access to the SQL Server database is not recommended.

Prerequisites: Database

This section provides you with the deployment prerequisites for the database server used by Project Portfolio Management. The Project Portfolio Management database is a data-intensive application. To help ensure that the Project Portfolio Management database has adequate resources available to it, the average CPU utilization on the server running SQL Server (and the Project Portfolio Management database) should be less than 25% of total CPU capacity (before the Project Portfolio Management database is added).

Category	Minimum Requirement
CPU and **Memory (RAM)**	The speed of the CPU and the amount of RAM will depend on several factors, including the version of Microsoft Windows Server that is used (Windows Server 2003 or Windows Server 2008; 32-bit or 64-bit). In general, you should ensure that the CPU and RAM on the database server exceeds the minimum requirements for the operating system and SQL Server. Also, the number of users that your organization will have should be factored in, especially with regards to the amount of data that your organization will be adding to the database (work items from the application and documents in the documents store). For a small configuration, the minimum amount of RAM is 2 GB, but the suggested amount is 4 GB. The minimum CPU for a small configuration is a single core Intel 2.5 GHz with hyperthreading, but the suggested CPU is an Intel Core2 Dual. For a large configuration, the 64-bit version of Windows Server 2008 is suggested, with a minimum of 3 GB RAM and a suggested amount of 8 GB. The minimum processor for a large configuration is an Intel Core2 Dual CPU.
Hard Disk Space	Project Portfolio Management requires a minimum of 1.0 GB hard disk space for installation; the amount of space needed by your organization will depend on several factors, including the number of users, the number of documents added to the document store, the number of work items, and so on. Typically, a small organization (around 30 total users) will need a database size between 30-40 GB.
Operating System	Windows Server 2003 or Windows Server 2008. All critical updates. 64-bit or 32-bit versions as appropriate. (Windows Server 2008 is the recommended operating system.)
Database	Microsoft SQL Server 2008 R2 Enterprise Edition.

Clients

Project Portfolio Management uses HTML, JavaScript, AJAX (Asynchronous JavaScript and XML), and Java. (To use the Task Plan view, the Java desktop client must be installed.) This means that any computer that is running Microsoft Internet Explorer 7.0 (recommended), Internet Explorer 6.0 or later, or FireFox 3.5 or later can access Project Portfolio Management. AJAX is a collection of programming technologies that efficiently deliver additional information to a browser when a user performs an action, without requiring a refresh of the entire page. JavaScript is the programming language that provides the interactive elements, such as pop-up menus, while AJAX uses XML to retrieve additional page data as needed, instead of all at once. When compared to traditional Web pages, this provides faster response and a more effective user experience.

Project Portfolio Management has three client applications:

- **Desktop client** Users access Project Portfolio Management from a client workstation or laptop computer using Microsoft Internet Explorer. License(s) and the security role(s) assigned to a user determine their permissions for the features, functionality,

and data in Project Portfolio Management. The Project Portfolio Management desktop client interacts with the Project Portfolio Management application server by using HTTP. This enables deployment across a wide variety of network topologies.

- **Administration client** The Project Portfolio Management administration client is a small, Windows-based application that is built using Microsoft .NET Framework, version 3.5. This administrative client is used only to manage licenses and LDAP user synchronization; all other administrative functions are managed in Project Portfolio Management through the desktop client.
- **Project Portfolio Management Connector for Microsoft Project** The Project Portfolio Management Connector for Microsoft Project allows users to create and manage project schedules and task plans. Microsoft Project Standard and Microsoft Project Professional can both be used; versions 2003 and 2007 are supported.
- **Project Portfolio Management OLEDB Provider** The Project Portfolio Management OLEDB Provider is a data service that allows users to access Project Portfolio Management data with applications such as Microsoft Office Excel 2003.

Prerequisites: Clients

This section provides you with the deployment prerequisites for the Project Portfolio Management clients. The performance of Project Portfolio Management clients can depend on the hardware capabilities of the client itself (older computers with less powerful processors and less RAM will not run as quickly as newer computers with more powerful processors and more RAM) and on the network environment in which the client is running (for example, if your environment has high levels of latency).

Category	Minimum Requirement
CPU	1 x 2.5 GHz Intel with hyperthreading minimum; 3.0 GHz (recommended).
Memory (RAM)	2.0 GB; 4.0 GB (recommended).
Resolution	1024 x 768; 1280 x 1024 (recommended).
Operating System	Any operating system that will run one of the supported browsers.
Browsers	Microsoft Internet Explorer 8.0, 7.0 (both recommended), 6.0 (with MSXML 4.0 SP2); Firefox 3.5.x. (Administrative functionality requires Microsoft Internet Explorer.)
Java	Java Runtime Environment 1.5.0_11 or 1.6.0_14+ (recommended) for using the Task Plan view.
PDF Viewer	Adobe Acrobat Reader 6.0, or later (needed for printing).
Framework	Microsoft .NET Framework 3.5 (only required for the local installation of the Microsoft Administration module).

Category	Minimum Requirement
Microsoft Project	Microsoft Office Project 2003 or Microsoft Office Project 2007 to use the Project Portfolio Management Connector.

Project Portfolio Management Deployment Scenarios

Project Portfolio Management has four primary deployment scenarios:

- **On-Demand / Trial version** The on-demand version of Project Portfolio Management contains the same project and resource management capabilities as the on-premise version of Project Portfolio Management. (There are some differences in the configuration, licensing, and user management functionality—generally, the on-demand version's configuration process is simpler.) For many organizations, especially those with fewer than 100 total users, the on-demand version of Project Portfolio Management is a practical alternative to an on-premise deployment. If your organization wants to test the new features available in Project Portfolio Management, you should use the trial, on-demand version of Project Portfolio Management. If your organization wants to test Project Portfolio Management as it would be running within your own environment, you should use the standard three-server deployment on basic hardware.

- **on-premise standard deployment** The standard Project Portfolio Management deployment is built around a database server running SQL Server, a reporting server running SQL Server 2008 R2 Reporting Services, and a Web server running the Project Portfolio Management front-end. There are many possible variations to the standard deployment, some of which can be driven by the size of your organization (such as the number of users, number of resources, number of items, and so on) and some of which can be driven by the requirements of your organization's IT department (such as load-balancing servers running IIS or providing clustering or fail-over capabilities for a database). When doing an on-premise deployment, your organization should use this guide (including the hardware and software requirements) as a baseline for determining the actual requirements of the configuration needed for your Project Portfolio Management deployment.

- **Migrating to Project Portfolio Management from Mariner 6.2** You can migrate to Project Portfolio Management from Mariner 6.2. There are some additional steps in this process that will help you migrate your database and to help you carry forward to Project Portfolio Management many of the settings and customizations you have made to your Mariner 6.2 environment. It is recommended that any migration to Project Portfolio Management be a migration to the standard deployment configuration.

- **Advanced scenarios** There are a few configuration options that some customers may need, such as offloading the Documents Manager from the Project Portfolio Management Web Server, working directly with configuration files, or working directly with the HTTP compression scripts (which are enabled automatically by Project Portfolio Management). It should be noted that few Project Portfolio Management customers will need to use any of these advanced options.

Trial Version

The on-demand version of Project Portfolio Management shares the same set of project management, configuration, and collaboration features as the on-premise version of Project Portfolio Management, including custom reporting, configuration options, and more. Some of the advantages of using the on-demand version of Project Portfolio Management include using the same features as the on-premise version of Project Portfolio Management, never having to deploy hardware and software, not needing to apply patches or updates, and not needing to perform migrations. To learn more about the on-demand version of Serena Project Portfolio Management, see http://www.serena.com/.

Setting Up a Staging Environment

We encourage you to set up a staging environment for Project Portfolio Management. This is a safe environment where configuration changes and/or upgrades can be tested without affecting the production system. To set up a staging environment:

1. **Acquire new hardware as needed.** Ideally, the staging environment will be an exact replica of the production system, with the same number of servers, the same CPUs, memory, etc. Although this is ideal, it is not always practical. You may determine that you have to use a single server for the staging environment and install all of the various components on that single server. If you have a large Microsoft SQL environment, you may prefer to have a single Project Portfolio Management staging server where all of the Project Portfolio Management components are installed and then share the MS SQL Server between the production and staging environments.

2. **Install any prerequisites as outlined in this document.**

3. **Install Project Portfolio Management.** During the installation, you have the option to choose to do a Typical or Custom installation. Choose to do a Custom installation. Assuming you are creating a single-server staging environment, you should install all of the Project Portfolio Management components except Middle-Tier and/or Data Services.

4. **Install any custom plug-ins.** If you have previously worked with Serena to create custom plug-ins for Project Portfolio Management, install those plug-ins. Refer to the documentation that came with the plug-in for detailed installation steps.

5. **Copy the production database to the staging environment.** Make a backup of the production database, copy it to the staging MS SQL Server, and restore the database. If you use the same MS SQL Server for production and staging, make a backup of the production database. Restore the database on the same MS SQL Server machine but provide a different database name.

6. **Copy the production docstore database to the staging environment.** Make a backup of the production docstore database, copy it to the staging MS SQL Server, and restore the database. If you use the same MS SQL Server for production and staging, make a backup of the production docstore database, and restore the database on the same MS SQL Server machine but provide a different database name.

7. **Copy the docstore files from the production server to the staging server.** If you are using file attachments, they will be stored on the physical file system of the web server, typically in a folder call "docstore." Copy this entire folder structure to the staging Web server. Ideally, you would copy the folder structure into the exact same location on the staging Web server. In other words, if the folder in production is called c:\docstore, you will want to copy the folder to the c:\docstore folder on the staging server.

8. **Set up the connection from Project Portfolio Management to the database.** Launch the Project Portfolio Management Administrator application, and click **New**. Enter the database information. Be sure to enter the information for the staging copy of the database, not the production database. In the **Creation** section, select **Connection Only**. After the connection is created. Make sure you can log into this database using the Administrator application.

9. **Set up the connection from Project Portfolio Management to the docstore database.** Launch the Project Portfolio Management Documents Administrator application, and click **New**. For the **Repository Location**, enter the path to the docstore location on the staging server. Enter the database information. Be sure to enter the information for the staging docstore database, not the production docstore database. In the **Creation** section, select **Connection Only**.

10. **Modify the database to point to staging.** There are many settings inside the database that reference outside locations. For example, there is a reference in the database to the report server and to the docstore. After you copy the production database to the staging database server, the data within the database will still point to the production location. See Knowledgebase article S137886 at http://support.serena.com for a SQL script file to help with this. Follow the instructions at the top of this document. You will need to set several variables to point to the staging locations. It is very important that you point to the staging locations and not the production locations. Once you have finished changing the variables, run the SQL script against the Project Portfolio Management staging database.

11. **Log into Project Portfolio Management.** You will log in as you always do, however you will need to go to the staging server URL instead of the production server URL.

12. **Upload any custom reports.** If your team has created custom reports, manually upload those reports into the staging environment.

13. **Sync up the docstore connection.** Open the Administration | Environment Settings view. Select the docstore connection from the drop down list and click **Save**.

14. **Verify settings.** On the **Environment Settings** view, verify that the docstore server and the report server options are pointing to the staging environments and not production.

Standard On-Premise Deployment

The standard deployment for Project Portfolio Management relies on dedicated hardware for the three primary components of Project Portfolio Management: Project Portfolio Management Web Server, Project Portfolio Management Reports Server, and Project

Portfolio Management Database Server. All other components, such as Project Portfolio Management Notifications and Project Portfolio Management Documents Manager, are run as part of the Project Portfolio Management Web Server component.

The standard deployment applies to all Project Portfolio Management on-premise deployments, including migrations from previous versions, and including advanced scenarios such as load-balancing the Project Portfolio Management Web Server or offloading the Project Portfolio Management Documents Manager.

Installing the Database Server

The Project Portfolio Management Database Server is installed on a server that is running Microsoft SQL Server. Unless noted, all items in the checklist are required.

	Checklist item
	Review hardware and software pre-requisites, and configuration guidelines.
	Acquire all necessary hardware and software.
	Install the appropriate Windows Server operating system, service packs, and updates.
	Install SQL Server. Accept all of the default settings.
	Create a SQL Server account for Project Portfolio Management. You should not use the SQL SA account, as many organizations regularly change that password for this account as part of their overall security policy. A unique, Project Portfolio Management-specific account should be created on the server on which the Project Portfolio Management database resides.
	Create a Project Portfolio Management database, and then restore the accelerator database to that database. The accelerator database can be downloaded from the Serena Support Web site at http://support.serena.com.

To add a SQL Server account

1. Open **SQL Server Management Studio**.
2. Expand **Security**.
3. Right-click **Logins**, and then select **New Login**.

4. In the **Login** dialog box, on the **General** page, type a name for the account, click **SQL Server Authentication** and enter a password, select **Master database** from the **Default Database** drop-down, and then click **OK**.
5. On the **Server Roles** page, under **Server Role**, select **dbcreator**, and then click **OK**.
6. On the **Confirm Password** dialog, type the account password, and then click **OK**.

Installing the Report Server

The Project Portfolio Management Report Server is installed on a server that is running Microsoft SQL Server 2008 R2 Reporting Services. Unless noted, all items in the checklist are required.

	Checklist item
	Review hardware and software pre-requisites, and configuration guidelines.
	Acquire all necessary hardware and software.
	Install the appropriate Windows Server operating system, service packs, and updates.
	Install SQL Server 2008 R2 Reporting Services. For more information: http://msdn.microsoft.com/en-us/library/bb500395.aspx
	Configure the service account for the Report Server. The configuration procedure depends on whether the Report Server is installed on the same computer as the Project Portfolio Management Web server (local) or on a different one (remote).
	Install the Project Portfolio Management Reports Server.
	After the Project Portfolio Management Web Server is installed and configured, verify the configuration of the Project Portfolio Management Report Server and that reports are running properly. Use SQL Server 2008 R2 Reporting Services Report Manager to verify the configuration of the Project Portfolio Management Report Server.

To configure the service account on a remote Report Server

If the Project Portfolio Management Report Server is installed on a different machine than the PPM Web server, you must allow the PPM Web server's domain computer account access to the SQL Server 2008 R2 Reporting Services.

1. On the server where you installed SQL Server 2008 R2 Reporting Services, navigate to **http://servername/reports/pages/folder.aspx** as an administrator.
2. Click the **Folder Settings** tab. (*Not* Site Settings.)
3. Click **New Role Assignment**.

4. In the **Group** or user name box, type the **DOMAIN_NAME\SERVER_Name$**, and then under **Role**, select the **Browser**, **Content Manager**, and **Publisher** check boxes.

   For example, if the PPM application server name is SYS-RPD-MAC1 and the domain name is MYDOMAIN, type MYDOMAIN\SYS-RPD-MAC1$ in the **Group** or user name box.

5. Click **OK**.

To configure the service account on a local Report Server

If the Project Portfolio Management Report Server is installed on the same machine as the PPM Web server, you must allow the local PPM Web server to access the SQL Server 2008 R2 Reporting Services.

1. On the server where you installed SQL Server 2008 R2 Reporting Services, navigate to **http://servername/reports/pages/folder.aspx** as an administrator.
2. Click the **Folder Settings** tab. (*Not* Site Settings.)
3. Click **New Role Assignment**.
4. In the **Group** or user name box, choose one of the following:
   - If the Project Portfolio Management Web server's application pool runs in Network Service Identity, type **NT AUTHORITY\NETWORK SERVICE**.
   - If the Project Portfolio Management Web server's application pool runs in Application Pool Identity (applicable only for Windows Server 2008 R2), type **IIS APPPool\DefaultAppPool**.
5. Under **Role**, select the **Browser**, **Content Manager**, and **Publisher** check boxes.
6. Click **OK**.

To install the Report Server

1. Start setup. On the **Welcome** page, click **Next**.
2. On the **License Agreement** page, review and accept the license agreement.
3. On the **Customer Information** page, in the **User Name** box, type your name, the name of the server, or some other designation. In the **Organization** box, type the name of your organization. Click **Next**. This information is optional.
4. On the **Destination Folder** page, select the installation location. To accept the default installation location, click **Next**. Otherwise, click **Change** and select a different location.
5. On the **Setup Type** page, choose to do a **Custom** installation.
6. On the **Custom Setup** page, click the **Reporting** component. Click **This feature will be installed on local hard drive**. For all other components, click **This feature will not be available**. Click **Space** to view the disk space required by the selected feature.

7. On the **Server Identification** page, enter the name of the server and the IIS Virtual Directory where Project Portfolio Management will be installed. In the **Virtual Directory** box, the default name is **PPM**. To change the virtual directory name, type it and then click **Next**.
8. On the **Ready to Install** page, click **Install** to begin the installation or **Back** to modify your installation options.
9. On the **Installation Complete** page, click **Finish**.

To verify that reports are installed correctly

1. Navigate to **http://servername/Reports/Pages/Folder.aspx**.
2. You should see a folder called **PESReports**. That folder should contain the following folders: **ITAccelerator**, **PESInvReports**, **PESAdminReports**, **PESResourceReports**, and **PESCustomReports**.
3. Click **PESInvReports**.
4. Click **DataSource1**.
5. As part of **<ConnectString>**, verify that the **Location** element is in the following format: **Location=servername/virtualdirectoryname;**.
6. Repeat steps 4-5 for each of the other **PESReports** subfolders.

Installing the Web Server

This should be done for all servers on which the Project Portfolio Management Web Server component will be installed, whether a single server or a distributed, multi-server deployment. Unless noted, all items in the checklist are required.

	Checklist item
	Review hardware and software pre-requisites, and configuration guidelines.
	Acquire all necessary hardware and software.
	Install the appropriate Windows Server operating system, service packs, and updates.
	Enable Internet Information Server (IIS).
	Enable ASP.NET.
	Allow ASP.NET applications. The ability to run ASP.NET applications is not allowed by default in Windows Server 2003; Project Portfolio Management requires that ASP.NET applications be allowed to run.
	Install the Microsoft .NET Framework 3.5.
	Install Microsoft Data Access Components (MDAC) 2.8, SP1 or later.

	Checklist item
	Install Microsoft Message Queuing (MSMQ) (optional). This is required to use Project Portfolio Management notifications. Remote private queues are not supported.
	Create and configure permissions for the Project Portfolio Management documents repository. Proper permissions are Share (Change) and NTFS (Modify).
	Install the Project Portfolio Management Web Server (including the Project Portfolio Management Documents Manager).
	Establish a connection to the Project Portfolio Management database using the Administration tool.
	Install your license file.
	Create the Project Portfolio Management Documents Manager database. This database stores metadata and associated information about documents that are uploaded to Project Portfolio Management. The actual files are stored in the repository.
	Log on to Project Portfolio Management and verify your configuration. The default login account is "peadmin", with password "keystone".
	Configure Project Portfolio Management reporting using the **Environment Settings** view in the Project Portfolio Management **Administration** module.
	Configure a connection to Document Manager using the **Environment Settings** view in the Project Portfolio Management 10.2 **Administration** module.
	Verify that Project Portfolio Management can connect to the Project Portfolio Management Report Server and that reporting is installed correctly.
	Verify that Project Portfolio Management can connect to the Project Portfolio Management Documents Manager and that the document repository is functional.

To enable IIS

1. Click **Start**, point to **Administrative Tools**, and then click **Internet Information Services (IIS) Manager**.
2. In **Internet Information Services Manager**, expand the server name, right-click the **Web Sites** folder, and then click **Properties**.
3. Click the **Services** tab.
4. Click **OK**.

To enable ASP.NET

1. Click **Start**, point to **Administrative Tools**, and then click **Manage Your Server**.

2. On the **Manage Your Server** page, click **Add or remove a role**.
3. On the **Preliminary Steps** pane, click **Next**.
4. On the **Server Role** pane, click **Application server (IIS, ASP.NET)**, and then click **Next**.
5. In the **Application Server Options** pane, select the **Enable ASP.NET** check box.
6. Click **Next**, and then click **Next** again to begin installation.
7. When installation is complete, on the **This Server is Now an Application server** page, click **Finish**.
8. Close the **Manage Your Server** tool.

To allow ASP.NET applications

1. Open **Internet Information Services (IIS) Manager**.
2. Expand **servername**, and then click **Web Service Extensions**.
3. In the **Results Pane**, select **ASP.NET v2.0**, and then click **Allow**. (ASP.NET 1.1 is not supported.)

To install Microsoft Message Queuing (MSMQ)

1. Click **Start**, point to **Settings**, click **Control Panel**, and then double-click **Add or Remove Programs**.
2. Click **Add/Remove Windows Components**.
3. In the **Windows Components Wizard**, open the details of the **Application Server**, select **Message Queuing**, click **OK** and then click **Next**.
4. Complete the wizard, accepting the default selections.

To add a document repository

1. Create a folder for the Document Repository (DocStore) on the server where the Documents Manager will be installed.
2. Right-click the folder and click **Properties**.
3. On the **Security** tab, click **Add**.
4. Enter **NETWORK SERVICE** and click **OK**.
5. Select **NETWORK SERVICE** and then under **Allow**, select the **Modify** check box.
6. Click **OK**.

To install Project Portfolio Management 10.2

1. Start Project Portfolio Management setup. On the **Welcome** page, click **Next**.

2. On the **License Agreement** page, review and accept the license agreement.
3. On the **Customer Information** page, in the **User Name** box, type your name, the name of the server, or some other designation. In the **Organization** box, type the name of your organization. Click **Next**. This information is optional.
4. On the **Destination Folder** page, select the installation location. To accept the default installation location, click **Next**. Otherwise, click **Change** and select a different location.
5. On the **Setup Type** page, accept the **Typical installation** settings (which will install the application server, the Notifications and Scheduler services, the Administration Module, and the Document Manager).
6. On the **Server Configuration** page, select the location of the installation. By default, this is a Web site in IIS. If you want to install to a Web site not included on this list, you must manually create the site in IIS and then re-run setup. In the **Virtual Directory** box, the default name is PPM. To change the virtual directory name, type it and then click **Next**.
7. On the **Ready to Install** page, click **Install** to begin the installation or **Back** to modify your installation options.
8. On the **Installation Complete** page, click **Finish**.

To add a documents manager database and connection

1. Double-click the **Documents Manager Administration** shortcut on the desktop, or click **Start**, point to **All Programs**, point to **Serena**, point to **PPM**, point to **Documents Manager**, and then click **Documents Manager Administration**.
2. In the **Server** box, type the name of the Documents Manager server.
3. Click **New**. The **Create New Documents Manager Connection** dialog box appears.
4. In the **Connection Name** box, type the Documents Manager database connection name.
5. In the **Repository Location** box, type the path of or browse to the Documents Manager repository folder. The repository folder is the storage location for documents checked into the Documents Manager.
6. In the **Server** box, type the Documents Manager database server name.
7. In the **Database Name** box, type the Documents Manager database name.
8. In the **Database User Name** box, type the Documents Manager database server user name. The user name entered in this field must have permissions to read and update database tables.
9. In the **Password** box, type the password for the Documents Manager database server user name.
10. Under **Repository Administrator Password**, in the **Password** and **Confirm Password** boxes, type a password for the document repository. This can be

anything you want. You will need this password later to make changes to the repository connection.

11. Under **Creation**, select **Database and tables**. Then type the database administrator user name in the **Database User Name** box, and the database administrator password in the **Password** box.

12. Click **Create** to create a Documents Manager database and a database connection. The **Documents Manager Administration** dialog box appears.

To add a connection to the Project Portfolio Management database

1. Double-click **Administration** shortcut on the desktop, or click **Start**, point to **All Programs**, point to **Serena**, point to **Project Portfolio Management**, and then click **Administration**. The Administration Logon dialog box appears.

2. Click **New**. The **Create New Connection** dialog box appears.

3. In the **Connection Name** box, type a name for this database connection. (This is the connection name that users will select when logging.)

4. In the **Server** box, type the database server name.

5. In the **Database Name** box, type the database name.

6. In the **Database User Name** box, type the database server user name. The user name entered in this field must have permissions to read and update database tables.

7. In the **Password** box, type the password for the database server user name.

8. Under **Creation**, click **Only Connection**, and then click **Create**. The Administration dialog box appears.

9. Under **Select Connection**, click the database connection name and click **OK** to log on to Administration. Once the database connection is established, you can modify the database connection and add additional databases.

To install the license file

1. Open the Project Portfolio Management Administration application.

2. Select **Connection Name**.

3. Enter the default username (peadmin) and password (keystone).

4. Click **OK**.

5. Click **License View**.

6. Click **Add Licenses**.

7. Browse and select the license file you received from Serena.

8. Click **Open**.

9. Click **Save license**.
10. Click **Close**.

To configure reports settings

1. Click on the **Setup** menu in the top right corner, and choose **Configuration**.
2. Click the **Environment Settings** tab.
3. On the **System Settings** tab, under **Reporting Settings**, in the **Report Server** box, enter the path to the reporting server, for example, http://<reporterservername>/ReportServer.
4. In the **Report Service Path** box, type**/ReportService.asmx**.
5. In the **Reports Root** box, enter **/PESReports/ITAccelerator**.
6. Click **Save**.

To configure connection to document manager

1. Click on the **Setup** menu in the top right corner, and choose **Configuration**.
2. Click the **Environment Settings** tab.
3. In the Documents Settings section, enter the server URL to the location where the Document Manager was installed, for example, http://<documentservername>/.
4. Select from the list of available Document Manager connections.
5. Click **Save**.

Installing Clients

Unless noted, all items in the checklist are required.

	Checklist item
	Install Microsoft Internet Explorer 8.0 (recommended), 7.0, or 6.0 (with MSXML 4.0 SP2)
	Install MSXML 4.0, SP2.
	Uninstall Internet Explorer Enhanced Security Configuration (if you need to access Project Portfolio Management from a server that has Project Portfolio Management installed).
	Add Project Portfolio Management to the list of local sites.
	Install Java Runtime 1.5.0_11 or 1.6.0_14 or later (for clients who will use the task plan).

	Checklist item
	Log on to Project Portfolio Management and verify that you can access Project Portfolio Management. The default login is "peadmin" with password "keystone".
	After Project Portfolio Management is installed, users can download the Project Portfolio Management Connector for Microsoft Project from the Settings page.
	Edit the Internet Explorer cache settings.
	Delete temporary Internet files (clear the browsing cache) (optional, but recommended periodically or when upgrading from Mariner 6.2 to Project Portfolio Management).
	If the PPM Administrator application is required on a client machine, install the .NET Framework version 3.5, then run the PPM installer, choosing a Custom installation. Install only the Administration component.

To uninstall Internet Explorer Enhanced Security Configuration

1. On the application server, click **Start**, click **Settings**, and then click **Control Panel**.
2. Double-click **Add/Remove Programs**.
3. Click **Add/Remove Windows Components**.
4. In the Components list, clear the **Internet Explorer Enhanced Security Configuration** check box, and then click **Next**. The Internet Explorer Enhanced Security Configuration component is removed.
5. Click **Finish**.

To add the application to the list of local intranet sites

1. On the application server, open Internet Explorer.
2. On the **Tools** menu, click **Internet Options**.
3. On the **Security** tab, click the **Local intranet**, and then click **Sites**.
4. Click **Advanced**.
5. In the **Add this Web site to the zone** box, type the URL for the site, and then click **Add**, and then click **Close**.
6. Click **OK** twice.

To delete temporary Internet files

1. Open Internet Explorer.
2. On the **Tools** menu, click **Internet Options**.

3. On the **General** tab, under **Temporary Internet Files**, click **Delete Files**.
4. On the **Delete Files** dialog box, select the **Delete all offline content** check box, and then click **OK**.
5. Click **OK** to close the **Internet Options** dialog box.

To edit Internet Explorer cache settings

1. Open Internet Explorer.
2. On the **Tools** menu, click **Internet Options**.
3. On the **General** tab, under **Check for newer versions of stored pages**, click **Automatically**.
4. Make sure that **Amount of disk space to use** is larger than 10 MB.

To edit Internet Explorer security settings

1. Open Internet Explorer.
2. On the **Tools** menu, click **Internet Options**.
3. On the **Security** tab, select the **Trusted** sites zone, and then click **Site**.
4. If the Web site is not listed under **Web sites**, type the Web address under **Add this Web site to the zone**, and then click **Add**.

Upgrading to Project Portfolio Management 10.2

CAUTION: It is STRONGLY RECOMMENDED that you deploy all releases, service packs, and patches to a test environment prior to deploying to production. A test environment should have a separate test application server and a separate test database from the production database. After deploying to the test environment, testing should be performed on all user activities prior to deployment in production. These tests should included (but are not limited to) custom plug-ins, custom reports, and custom scripts in the View Designer.

You can upgrade from previous versions of Project Portfolio Management (Mariner 6.2, Mariner 2008 R1, Mariner 2008 R2, Mariner 2008 R3, Project Portfolio Management 2009 R1), and Project Portfolio Management 2010 R1. The current version of the Project Portfolio Management application components should be installed first. After the application components are installed, the databases can be migrated as well. The database must be migrated step by step from major version to major version. For example, if your organization is upgrading from Mariner 6.2 to Project Portfolio Management 10.2, then you must first migrate the database to Mariner 2008 R1, and then migrate to Mariner 2008 R2, and then migrate to Mariner 2008 R3, and then migrate to Project Portfolio Management 2009 R1, and then migrate to Project Portfolio Management 2010 R1 before migrating to Project Portfolio Management 10.2. For each major version, you must use the migration tool that is specific to the version to which you are migrating.

The current version of Project Portfolio or Mariner that is installed can be verified in the PES_VersionHistory table in the database. The following version numbers correspond to the following product versions:

Version Number	Product Version
6.20.xx	Mariner 6.2
2008.01.xx	Mariner 2008 R1
2008.02.00	Mariner 2008 R2
2009.01 and **2009.02**	Mariner 2008 R3
2009.03	Project Portfolio Management 2009 R1
2010.01	Project Portfolio Management 2010 R1
10.2	Project Portfolio Management 10.2

Custom plug-ins may require an update before they can be migrated. If your organization has custom plug-ins that you want to migrate, contact Serena Professional Services before you begin the migration process. After the plug-ins have been updated, they can be added.

If migrating from an earlier version of Mariner or Project Portfolio Management, any custom reports should be upgraded as necessary to the version of SQL Server Reporting Services supported by the version of Project Portfolio Management to which you are migrating.

If migrating from Mariner 6.2 or Mariner 2008 R1, any JavaScript written as part of a Summary View in the View Designer will need to be updated in support of the new Dojo platform that was first implemented in Mariner 2008 R2.

During the migration process, you should follow the planning and sizing recommendations contained in this guide, as well as following the steps outlined in the section titled Standard On-Premise Deployment. Additional upgrade and migration steps are outlined below.

	Checklist item
	Review hardware and software pre-requisites, and configuration guidelines.
	Acquire all necessary hardware and software.
	Install the appropriate Windows Server operating system, service packs, and updates.
	Perform a full system database backup.
	If upgrading from Mariner 6.2, backup custom item request pages (IRPs). Any custom Item Request Pages (IRP) that your organization uses will be lost. Once the upgrade is complete, the custom item request pages can be recreated in the View Designer. For reference purposes, the existing pages can be retained by backing up the IRP directory.

	Checklist item
	Backup custom reports. After the migration is complete, you can upload them into Project Portfolio Management from the System Settings module on the Report Templates screen. Because of database schema changes over time, custom reports that worked in previous versions may require additional updates for them to work properly. Review release notes for information about changes made. If your organization needs help making these changes, contact Serena Professional Services before you begin the migration process.
	Uninstall the migration tool. This can be done through the Control Panel.
	Uninstall all Mariner 6.2, Mariner 2008 R1, Mariner 2008 R2, Project Portfolio Management 2009 R1 server components, or Project Portfolio Management 2010 R1 (Mariner Web Server, Mariner Reports Server, Mariner Documents Manager, and Mariner Notifications), the Mariner Connector for Microsoft Project, and the Mariner Administration Module.
	Install the application. Follow the steps under Standard Deployment for each of the Mariner components.
	Place any updated custom plug-ins into the appropriate directories.
	Create and connect to the Project Portfolio Management database. You must create the database and establish a connection from the administration module. This also sets the administrator password for the default "peadmin" account. A SQL Server account is used to instantiate and use this database connection. It is recommended that you create an application-specific account in SQL Server to facilitate communication between the application and the database.
	Install the appropriate migration tool on the application server. The database must be migrated step by step from major version to major version. For example, if your organization is upgrading from Mariner 6.2 to Project Portfolio Management 10.2, then you must first migrate the database to Mariner 2008 R1, and then migrate to Mariner 2008 R2, and then migrate to Mariner 2008 R3, and then migrate to Project Portfolio Management 2009 R1, and then migrate to Project Portfolio Management 2010 R1 before migrating to Project Portfolio Management 10.2. In this example, you would first install the Mariner 2008 R1 migration tool. The migration tools for all releases of Project Portfolio Management can be downloaded from the Serena Support Web site at http://support.serena.com.
	Run the Migration Utility. By default, this is located at C:\Program Files\Serena\Mariner Migration\PacificEdgeSoftware.Migration.Driver.exe. Choose the connection from the drop-down list on the top. Click the Migrate button.

	Checklist item
	Migrate the database again, as needed. Uninstall the migration tool, install the migration tool for the next major version, and run the migration. In the example above, you would uninstall the Mariner 2008 R1 migration tool, install the 2008 R2 migration tool, and run the migration. Repeat this again for each major version until the database has been migrated all the way to the current release.
	After the Report Server is installed and configured, upload any custom reports into Project Portfolio Management from the System Settings module on the Report Templates screen.
	If migrating from Mariner 6.2, any custom IRP pages will need to be recreated using the View Designer. Refer to the documentation.
	Uninstall and install the Serena PPM Connector for Microsoft Project to any client machine which will be using it. The Serena PPM Connector for Microsoft Project can be installed from the application. In the top navigation, select your logon name and choose **Settings**. On the **Settings** page, under **Connectors and Provider**, click **Install Serena PPM Connector for Microsoft Project**.

To back up custom item request pages

1. On the server, navigate to the location of your item request pages. By default, this location is **C:\Program Files\Serena\Mariner\Mariner\InvestmentRequest** or **C:\Program Files\Serena\PPM\Mariner\InvestmentRequest**.
2. Backup the contents of that directory or copy that directory to another location on the hard disk.
3. Make note of your administrative settings for the item request pages in your environment.

To back up custom reports

Save the physical RDL files out of SQL Server 2008 R2 Reporting Services that are used for custom reports.

To install the migration tool

1. On the **Welcome** page, click **Next**.
2. On the **License Agreement** page, review and accept the license agreement.
3. On the **Customer Information** page, in the **User Name** box, type your name, the name of the server, or some other designation. In the **Organization** box, type the name of your organization, and then click **Next**. The information entered on this page is optional.
4. On the **Destination Folder** page, accept the default installation and click **Next**. Or click **Change** to modify the installation location.

5. On the **Server Identification** page, in the **Server Name** box, type the name of the Web server. In the **Virtual Directory** box, the default name is PPM. To change the virtual directory name, type it and then click **Next**.
6. On the **Ready to Install** page, click **Install**.
7. On the **Installation Complete** page, click **Finish**.

To add a connection to the Project Portfolio Management database

1. Double-click **Administration** shortcut on the desktop, or click **Start**, point to **All Programs**, point to **Serena**, point to **Project Portfolio Management**, and then click **Administration**. The Administration Logon dialog box appears.
2. Click **New**. The **Create New Connection** dialog box appears.
3. In the **Connection Name** box, type a name for this database connection. (This is the connection name that users will select when logging.)
4. In the **Server** box, type the database server name.
5. In the **Database Name** box, type the database name.
6. In the **Database User Name** box, type the database server user name. The user name entered in this field must have permissions to read and update database tables.
7. In the **Password** box, type the password for the database server user name.
8. Under **Creation**, click **Only Connection**, and then click **Create**. The Administration dialog box appears.

To verify that reports are installed correctly

1. Navigate to **http://servername/Reports/Pages/Folder.aspx**.
2. You should see a folder called **PESReports**. That folder should contain the following folders: **ITAccelerator**, **PESInvReports**, and **PESResourceReports**.
3. Click **PESInvReports**.
4. Click **DataSource1**.
5. As part of **<ConnectString>**, verify that the **Location** element is in the following format: **Location=servername/virtualdirectoryname;**.
6. Repeat steps 4-5 for each of the other **PESReports** subfolders.

Uninstall

You can use the setup wizard to uninstall Project Portfolio Management.

Note: Even though it is presented as an option, you cannot use the setup wizard to modify your Project Portfolio Management install.

While re-installing or upgrading Project Portfolio Management 10.2 from earlier releases, the ISAPI Filter in IIS6 that disables access to the Project Portfolio Management 10.2 Virtual directory while browsing should be removed by the following procedure:

1. Open the IIS management console.
2. Select the **Default Web Site**.
3. Right click **Default Website** and select **Properties**.
4. Select the **ISAPI Filters** tab.
5. If the ISAPI filter is present, remove the filter and click **Apply**.

Configuration Options

When optimizing the performance of your Project Portfolio Management deployment, it is best to focus on providing the servers with the fastest possible CPUs, ample memory, hard disk space, and so on. Second, look closely at memory utilization and ensure that usage is not excessive. Then, consider multiple processor configurations and other advanced deployment options that are available with the Windows Server operating system. In the end, any single Project Portfolio Management operation happens fastest when CPU speed, network bandwidth, and available memory are high. Using the fastest possible CPU at the client, server, and repository tiers results in the best user experience.

Other ways to optimize the performance of your Project Portfolio Management deployment include:

- **Enabling SSL** Encrypted communication is used to protect user passwords from being sent over the network in plain text; user interactions with their Project Portfolio Management data may not require that level of security, especially considering the potential performance implications. Project Portfolio Management should be enabled to use SSL for user authentication only.
- **Load-balancing Project Portfolio Management** Project Portfolio Management can be deployed in a load-balanced configuration using the network load balancing (NLB) features of Windows Server (optional) or by using hardware-based load balancing (recommended).
- **Modifying Project Portfolio Management web.config file settings** In addition to all of the standard functions that a web.config file provides, Project Portfolio Management uses it to manage options such as allowing users to access the Project Portfolio Management Report Server through a proxy, requiring SSL for user authentication only, and disabling cookies.
- **Offloading the Project Portfolio Management Documents Manager from the Project Portfolio Management Web Server** This is most easily done during your initial deployment, but it can be done at any time. The Project Portfolio Management Documents Manager is a repository for documents associated with items that have been uploaded to Project Portfolio Management by users in your organization. This server can be deployed as a stand alone server or as part of any load balanced configuration.
- **Running multiple versions of SQL Server Reporting Services** If your organization is running SQL Server Reporting Services as a second instance on the same server that is already running another version of SQL Server Reporting Services, you will need to add a version key (if one was not automatically created).

Enabling SSL

Some organizations may require users to connect to and interact with Project Portfolio Management over an encrypted channel. Enabling Secure Sockets Layer (SSL) encryption for all Project Portfolio Management Web traffic, does provide additional data security, however the impacts to performance can be significant.

In most cases, encrypted communication is used to protect user passwords from being sent over the network in plain text; user interactions with their Project Portfolio Management data may not require that level of security, especially considering the potential performance implications. One trade-off between security and performance involves enabling SSL encryption exclusively for user authentication. After a user logs on to Project Portfolio Management using SSL (https://), the rest of a user's session in Project Portfolio Management carries forward without SSL encryption (http://). This can provide optimal balance for many organizations.

Configuring SSL for Internet Information Services is beyond the scope of this section; organizations wishing to use SSL for all communications can visit http://www.microsoft.com for instructions.

To enable SSL for logon.aspx

1. In **IIS Manager**, expand **Web Sites**, expand **Default Web Site**, and then click **Mariner**.
2. In the view pane, right-click **Logon.aspx**, and then click **Properties**.
3. On the **Directory Security** tab, under the **Secure Communications**, click **Edit**.
4. On the **Secure Communications** dialog, select the **Require secure channel (SSL)** check box, and then click **OK**. You can optionally select 128-bit encryption and client certificate options.
5. Click **OK**.

To enable SSL for web.config

1. On the Web server, open the web.config file. By default, this file is located at C:\Program Files\Serena\Mariner\Mariner.
2. Locate the <appSettings> parameter, and then locate the following XML: **<add key="SSLOnlyForLogon" value="true"></add>**. If this text does not appear within the <appSettings> parameter, you must add it.
3. Uncomment the <Add> parameter; that is, move it just after the ending comment arrow —>.
4. Locate the <forms> parameter, and then change loginUrl="Logon.aspx" to LoginUrl="https://servername/virtual_directory/Logon.aspx" (the virtual directory is typically "mariner").
5. Locate the <location path="DialogHost.aspx"> parameter. Immediately after the closing </location> tag, add the following XML: **<location path="logon.aspx"> <system.web> <authorization> <allow users="*"> </allow>**

</authorization> </system.web> </location>. Close and save the web.config file.

Load-Balancing

For increased scalability and performance, Project Portfolio Management can be deployed in a load-balanced configuration. This can be configured using the network load balancing (NLB) features of Windows Server or by using hardware-based load balancing.

This section focuses on using hardware to load-balance the Project Portfolio Management Web server. After the installation process for the Project Portfolio Management Web server is complete, there are additional steps that must be completed for Project Portfolio Management to function properly in a load-balanced environment.

	Checklist item
	For each server that will be part of the load-balanced environment, follow the steps for installing the Project Portfolio Management Web Server that are provided in the Standard Deployment section up to (and including) allowing ASP.NET applications.
	Create a network user account called MarinerAppAdmin that will be used as a Project Portfolio Management-specific account. This account will be used to create the shared directories for charts and print jobs. It does not require administrative or elevated rights on the network, but will require Full Control permission to the directories needed for charts and print jobs.
	For each server that will be part of the load-balanced environment, modify the machine.config file. By default, each server has a unique machine key value; when deploying Project Portfolio Management in a load-balanced configuration, each server in the farm must have the identical machine key.
	For each server that will be part of the load-balanced environment, add the Project Portfolio Management-specific user account to the IIS_WPG.
	For each server that will be part of the load-balanced environment, configure the server to allow remote connections. Using Project Portfolio Management in a load-balanced environment will require that one of the servers maintain session state. When Project Portfolio Management is deployed in a load-balanced environment, a single server is designated as the State Server and all other servers in the load-balanced environment will be pointed to it.
	For each server that will be part of the load-balanced environment, install the Project Portfolio Management Web Server component on all server hardware that will be used in the load-balanced environment. Use the same steps outlined in the standard deployment for the Project Portfolio Management Web Server.
	For each server that will be part of the load-balanced environment, create a database connection.

	Checklist item
	For each server that will be part of the load-balanced environment, edit the Web.config file. Designate one of the servers as the State Server and record that server's static IP address. For each of the servers in the load-balanced environment that will be pointed at the State Server, modify the web.config file and point it to the static IP address that belongs to the State Server.
	Copy the contents if the default charts preview folder and add them to the charts preview folder that is located on the State Server.
	Copy the web.config file located in the default PrintJobs folder and add them to the PrintJobs folder that is located on the State Server.
	For each server that will be part of the load-balanced environment, remove the default chart preview, temporary charts, and print jobs directories (leaving just the three shared folders on the State Server). By default, these directories are located at: • c:\Program Files\Serena\Mariner\Mariner\PrintJobs • c:\Program Files\Serena\Mariner\Mariner\Charts\Previews • c:\Program Files\Serena\Mariner\Mariner\Charts\Temp
	On the State Server, create virtual directories for the charts (previews and temporary) and print jobs shared folders in IIS. These will replace the default directories in the Project Portfolio Management folder hierarchy in IIS and will enable all servers in the load-balanced environment to access the contents of the shared folders. Since the new shared folders reside on the State Server, you can reference them with a local path.
	For each server that will be part of the load-balanced environment, except for the State Server, edit the local security policy. This is to ensure that the MarinerAppAdmin domain account has the necessary rights on the other servers in the farm.
	For each server that will be part of the load-balanced environment, except for the State Server, create a new application pool. This is to ensure that the shared folders for charts and print jobs can be accessed by all servers that are part of the load-balanced environment.
	For each server that will be part of the load-balanced environment, except for the State Server, add a virtual directory for each of the shared folders used by charts (previews and temporary) and print jobs. These virtual directories will replace the default directories in the Project Portfolio Management folder hierarchy in IIS and will enable all of the servers in the load-balanced environment to access common content stored in the charts and print jobs shared folders. These directories must be referenced using the UNC path, for example, \\stateservername\PrintJobs.
	For each server that will be part of the load-balanced environment, reset IIS.

To edit the machine.config file

1. After obtaining a new machine key for the farm, open the machine.config file on the first server. By default, this file is located at: **C:\WINDOWS\Microsoft.NET\Framework\v2.0\CONFIG**.
2. Comment out or delete the existing <machinekey> value (Enter <!- - in front of the text and—> at the end of the text). If you are having trouble locating the entry, search for "machinekey" in the file. The third reference will be the value shown above.
3. Enter the new key value you obtained directly beneath the old value: **<machineKey validation="SHA1" validationKey="newKeyValue" decryptionKey="newDecryptionKeyValue" />**
4. Repeat for each server in the farm, entering the duplicate key each time.

To add a user account to the IIS Worker Process Group

1. Right-click **My Computer**, and then click **Manage**.
2. Expand **System Tools**, expand **Local Users and Groups**, and then click **Groups**.
3. Right-click **IIS_WPG**, click **Add to Group**, and then click **Add**.
4. Under **Enter the object names to select**, type the name of the specific user account, and then click **OK**.

To edit the registry to allow for remote connections

1. Click **Start**, and then click **Run**.
2. In the Run box, type **regedit**, and then click **OK**.
3. In the **Registry Editor**, navigate to **HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\aspnet_state\Parameters**.
4. In the results pane, double-click **AllowRemoteConnection**.
5. In the **Edit DWORD Value** dialog, under **Value Data**, type **1**.
6. Repeat this procedure on each server in the farm.

To point a server at a static IP address

1. On one of the servers in the farm, open the **web.config** file.
2. Locate the **<sessionState>** parameter.
3. Change <sessionState mode="InProc" to <sessionState mode="StateServer"> and then in the stateConnectionString parameter, change the value from the default IP address to the static IP address of the designated state server. Leave the port number (:42424) unchanged.

4. Repeat for each server in the farm, including the server designated as the state server.

To add shared folders

1. On the server you designated as the master server, create a folder called **ChartPreviews**.
2. Right-click the folder, and then click **Properties**.
3. On the Properties dialog, click the **Sharing** tab.
4. Click **Share this folder**, and then click **Permissions**.
5. Select the **Everyone** group, and then click **Remove**.
6. Click **Add**.
7. Under **Enter the object names to select**, type **NETWORK SERVICE**, and then click **OK** to close the **Select Users or Groups** dialog box.
8. Select **NETWORK SERVICE** and then under **Allow**, select the **Full Control** check box.
9. Click **OK**.
10. Repeat steps 7-9 to add the **MarinerAppAdmin** domain account you created in above.
11. On the **Security** tab, click **Add**.
12. Repeat steps 6-10.
13. Select the **NETWORK SERVICE** account, and then under **Allow**, select the **Full Control** check box. Repeat for the **MarinerAppAdmin** account.
14. Click **OK**.
15. Repeat this procedure for two additional shared folders, which should be called **ChartTemp** and **PrintJobs**, respectively.

To copy chart preview files into the chart preview shared folder

1. From any of the servers that are part of the load-balanced environment, copy the contents of the ChartPreviews folder. By default, this is located at **c:\Program Files\Serena\Mariner\Charts\Previews**.
2. On the State Server, add the contents to the ChartsPreviews shared folder.

To copy default print jobs to the shared print jobs folder

1. From any of the servers that are part of the load-balanced environment, copy the web.config file from the PrintJobs directory. By default, this is located at **c:\Program Files\Serena\Mariner\Mariner\PrintJobs**.
2. On the State Server, add the web.config file to the PrintJobs shared folder.

To add a virtual directory using IIS Manager

1. In IIS Manager, expand **Web Sites**, and expand the Web site where the application is installed.
2. Right-click **Charts**, point to **New**, and then click **Virtual Directory**. The **Virtual Directory Creation Wizard** appears. Click **Next**.
3. In the **Alias** box, type **previews**, and click **Next**.
4. In the **Path** box, type the local path to the shared **ChartPreviews** directory you created above or click **Browse** to navigate to it, and then click **Next**.
5. Clear the **Always use the authenticated user's credentials when validating access to the network directory** check box, and enter the user name and password for the specific account created above, and then click **Next**.
6. Under **Allow the following permissions**, select the **Read** and **Run scripts** check boxes, and then click **Next**.
7. Click **Finish**.
8. Repeat steps 2-8 and create a virtual directory called **temp**, which points at the shared directory **ChartTemp** created above.
9. Create the third virtual directory under Project Portfolio Management, at the same level as **Charts**. This virtual directory is called **PrintJobs**, and points to the **PrintJobs** shared folder created above.

To edit the local security policy

1. Click **Start**, point to **Administrative Tools**, and then click **Local Security Policy**.
2. Expand **Local Policies**, and then click on **User Rights Assignment**.
3. Double-click the policy **Adjust memory quotas for a process**. On the **Properties** dialog, add the **MarinerAppAdmin** domain account, and then click **OK**.
4. Repeat step 3 to add the **MarinerAppAdmin** account to **Log on as a service** and **Replace a process level token**.
5. On the **File** menu, click **Save**, and then close the console.
6. The servers must be rebooted for the changes to take effect.

To add an application pool in IIS

1. In IIS Manager, right-click **Application Pools**, point to **New**, and then click **Application Pool**.
2. In the **Add New Application Pool** dialog, type **PESpool**, leave **Use default settings for new application pool** selected, and then click **OK**. Click **Next**.
3. Right-click **PESpool**, and then click **Properties**.
4. On the **Recycling** tab, clear the **Recycle worker processes (in minutes)** check box.
5. On the **Identity** tab, click **Configurable**, enter the user name and password for the specific user account you created, and then click **OK**.

To reset IIS

1. Click **Start**, and then click **Run**.
2. In the **Run** box, type **cmd**, and then press **ENTER**.
3. In the command prompt window, type **iisreset**, and then press **ENTER**.
4. Close the command prompt window.
5. Repeat for each server in the farm.

Modifying Web.Config File Settings

In addition to containing database connection information and other data that is standard for a web.config file, there are some custom parameters that are important for Project Portfolio Management:

- **Help** By default, the help system is pointed at a virtual directory on the Internet, which is part of the on-demand configuration. If your organization does not want the help system to be pointed there, you can create a virtual directory, move the help into that virtual directory, and then configure the web.config file to point the Help setting to that virtual directory.
- **PasswordStrengthLevel** Allows you to configure the strength of user passwords: weak, medium, or strong. A weak password must be between 4-16 characters. A medium password must be between 8-16 characters and must contain at least one numerical character (0-9), one lowercase character, and one uppercase character. A strong password must contain between 8-16 characters and must contain at least one numerical character (0-9), one lowercase letter, one uppercase letter, and one alphanumeric character.
- **ProxyReportServer** Allows access to the Project Portfolio Management Report Server to be done with a proxy.
- **SSLPnlyForLogon** Requires logon to Project Portfolio Management to be done using SSL, but allows users (after they have logged on successfully) to navigate through Project Portfolio Management without using SSL.

- **SessionState** Allows cookies to be disabled.

To edit the ProxyReportServer parameter

1. On the Web server, open the web.config file. By default, this file is located at **C:\Program Files\Serena\Mariner\Mariner**.
2. Locate the <appSettings> parameter, and then locate the following: **<add key="ProxyReportServer" value="true"></add>**. If this text does not appear within the <appSettings> parameter, you must add it.
3. Uncomment the <Add> parameter; that is, move it just after the ending comment arrow —>.
4. Reset IIS.

To edit the SSLOnlyForLogon parameter

1. On the Web server, open the web.config file. By default, this file is located at **C:\Program Files\Serena\Mariner\Mariner**.
2. Locate the <appSettings> parameter, and then locate the following: **<add key="SSLOnlyForLogon" value="true"></add>**. If this text does not appear within the <appSettings> parameter, you must add it.
3. Uncomment the <Add> parameter; that is, move it just after the ending comment arrow —>.
4. Locate the <forms> parameter, and then change loginUrl="Logon.aspx" to LoginUrl="https://servername/virtual_directory/Logon.aspx" (the virtual directory is typically "mariner").
5. Locate the <location path="DialogHost.aspx"> parameter. Immediately after the closing </location> tag, add the following section: **<location path="logon.aspx"> <system.web> <authorization> <allow users="*"> </allow> </authorization> </system.web> </location>**. Close and save the web.config file.
6. Reset IIS.

To edit the SessionState parameter

1. On the Web server, open the web.config file. By default, this file is located at C:\Program Files\Serena\Mariner\Mariner.
2. Locate the <appSettings> parameter, and then locate the following: **<sessionState mode="InProc" stateConnectionString="tcpip=127.0.0.1:42424" sqlConnectionString="data source=127.0.0.1;user id=sa;password=" cookieless="false" timeout="20">**. If this text does not appear within the <appSettings> parameter, you must add it.
3. Uncomment the <Add> parameter; that is, move it just after the ending comment arrow —>.

4. Change mode="InProc" to mode="StateServer" and then in the stateConnectionString parameter, change the value from the default IP address to the static IP address of the designated state server. Leave the port number (:42424) unchanged.

5. You can change the timeout value for logons (set to a default of 20 minutes) by modifying the timeout parameter, for example a value of 60 sets the timeout at 60 minutes. If your organization modifies this setting, be sure to match that setting with the timeout value for logon.aspx, which is located in the web.config file: **<authentication mode="Forms"> <forms name="PESPortfolioEdge" path="/" loginUrl="Logon.aspx" protection="All" timeout="20" /> </authentication>**.

Offloading the Documents Manager

The Project Portfolio Management Documents Manager is typically installed on the same server that is running the Project Portfolio Management Web Server. However, some configurations may use the Project Portfolio Management Documents Manager on dedicated hardware, such as when the Project Portfolio Management Web Server is load balanced in a deployment with a large number of users, resources, and items, or if your organization requires a lot of space for documents storage.

Unless noted, all items in the checklist are required.

	Checklist item
	Review hardware and software pre-requisites, and configuration guidelines.
	Acquire all necessary hardware and software.
	Install the appropriate Windows Server operating system, service packs, and updates.
	Enable Internet Information Server (IIS).
	Enable ASP.NET 2.0.
	Create and configure permissions for the Project Portfolio Management documents repository. The documents repository is a shared folder on the Project Portfolio Management Documents Manager. It should be called servername\ASPNET (where servername is the name of the Project Portfolio Management Documents Manager server).
	Create and configure permissions for the Project Portfolio Management documents repository. Proper permissions are Share (Change) and NTFS (Modify).
	Create the Project Portfolio Management Documents Manager database. This database stores metadata and associated information about documents that are uploaded to Project Portfolio Management. The actual files are stored in the repository.
	Install the Project Portfolio Management Documents Manager.

	Checklist item
	Verify that you can upload documents to Project Portfolio Management.
	Increase timeout settings for uploading documents to the documents repository from Project Portfolio Management (optional; recommended if the Project Portfolio Management Documents Manager is installed on a server running Windows Server 2000). Modify the machine.config file to increase the timeout and memory limits.

To add a document repository

1. Create a folder on the server where the Documents Manager is located.
2. Right-click the folder and click **Properties**.
3. In the **Properties** dialog box, click the **Sharing** tab.
4. Click **Share this folder**, and then click **Permissions**.
5. Select the **Everyone** group, and then click **Remove**.
6. Click **Add**.
7. Ensure that the name of the server is listed under **From this Location**; otherwise, click **Locations** and then select it.
8. Under **Enter the object names to select**, type **servername\ASPNET**, and then click **OK** to close the **Select Users or Groups** dialog box.
9. Select **ASP.NET Machine Account (servername\ASPNET)**, and then under **Allow**, select the **Change** check box.
10. Click **OK**.
11. On the **Security** tab, click **Add**.
12. Repeat steps 6 and 7.
13. Select **ASP.NET Machine Account (servername\ASPNET)**, and then under **Allow**, select the **Modify** check box.
14. Click **OK**.

To install the Documents Manager

1. Start Project Portfolio Management setup. On the **Welcome** page, click **Next**.
2. On the **License Agreement** page, accept the license agreement.
3. On the **Customer Information** page, in the **User Name** box, type your name, the name of the server, or some other designation. In the **Organization** box, type the name of your organization. Click **Next**. This information is optional.

4. On the **Destination Folder** page, select the installation location. To accept the default installation location, click **Next**. Otherwise, click **Change** and select a different location.

5. On the **Setup Type** page, select Custom the **Typical** installation settings (which will install the application server, the Notifications and Scheduler services, and the Administration Module). Select **Custom** to choose different installation options.

6. On the **Custom Setup** page (if selected), Click a feature, such as Administration, or a sub-feature. Click **This feature will be installed on local hard drive** or **This feature, and all sub-features will be installed on local hard drive**. Repeat for all features and sub features you want to install. For any features you do not want to install, click **This feature will not be available**. Click **Space** to view the disk space required by the selected feature and click **Change** to modify the destination location for the selected feature.

7. On the **Server Configuration** page, select the location of the installation. By default, this is a Web site in IIS. If you want to install to a Web site not included on this list, you must manually create the site in IIS and then re-run setup. In the **Virtual Directory** box, the default name is Project Portfolio Management. To change the virtual directory name, type it and then click **Next**.

8. On the **Ready to Install** page, click **Install** to begin the installation or **Back** to modify your installation options.

9. On the **Installation Complete** page, click **Finish**.

To increase timeout settings for Documents Manager

1. Using a text editor, open the machine.config file, located by default in the c:\Windows\Microsoft.NET\Framework\v2.2\CONFIG directory.

2. Under **httpRuntime**, change the default value of executionTimeout from **90** to **1800**.

3. Under **processModel**, change the default value of memoryLimit from **60** to **80**.

4. Under **processModel**, change the default value of **responseDeadlockInterval** from **00:03:00** to **00:30:00**.

5. Save and close the machine.config file.

Running Multiple Versions of Reporting Services Side-by-Side

When SQL Server 2008 R2 Reporting Services is installed as a second instance on a server that is already running another version of SQL Server Reporting Services, a version key may not be created. However, a version key is required for Project Portfolio Management to recognize SQL Server Reporting Services.

For Project Portfolio Management to recognize that a supported version of SQL Server Reporting Services is installed, you will need to add a registry key with the following properties:

- **Data type** The data type for the registry key should be **REG_SZ**.

- **Name** The name of the registry key should be **Version**.
- **Value** The version number of the instance of SQL Server Reporting Services that is installed, for example **9.00.3042.00**.

In addition to adding a version key, you will need to ensure that each instance of SQL Server reporting services is represented in Application Pools folder in Internet Information Services (IIS) Manager and that Project Portfolio Management points to the correct instance.

For the supported version of SQL Server for your version of Project Portfolio Management, see the Serena Support Web site at http://support.serena.com/Roadmap/MARINER/MARINER_Supported_Platforms.aspx.