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Project Portfolio Management 2009 R1

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Table of Contents

Overview 6
Planning Your Configuration 7
Involving the IT Group 7
Business and Technical Considerations 8
Sizing Your Configuration 10
Scalability Zones 11
Overview of Server Components 14
Web Server 15
Prerequisites: Web Server 15
Reports 16
Prerequisites: Reports 16
Database 17
Prerequisites: Database 17
Clients 18
Prerequisites: Clients 18
Project Portfolio Management 2009 R1 Deployment Scenarios 20
Trial Version 20
Standard on premise Deployment 21
Installing the Database Server 21
To add a SQL Server account 22
Installing the Reports Server 22
To enable IIS 23
To enable ASP.NET 23
To add the IUSR_servername account 24
To enable anonymous access 24
To install the Reports Server 24
To verify that reports are installed correctly 25
To reduce IUSR_servername account permissions 25
To increase timeout settings for Documents Manager 25
Installing the Web Server 26
To enable IIS 27
To enable ASP.NET 28
To allow ASP.NET applications 28

To install Microsoft Message Queuing (MSMQ) 28
To add a document repository 28
To install Project Portfolio Management 2009 R1 29
To add a documents manager database and connection 29
To add a database connection 30
To configure reports settings 31
To restore a database from a backup file 31
Installing Clients 31
To uninstall Internet Explorer Enhanced Security Configuration 32
To add the application to the list of local intranet sites 32
To delete temporary Internet files 32
To edit Internet Explorer cache settings 32
To edit Internet Explorer security settings 33
Migrating to Project Portfolio Management 2009 R1 33
To back up custom item request pages 35
To back up custom reports 35
To install the migration tool 36
To add a database connection 36
To migrate a Mariner 6.2 database to Project Portfolio Management 2009 R1 36
To verify that reports are installed correctly 37
To restore custom item request pages 37
Uninstall 37
Configuration Options 38
Enabling HTTP Compression 39
To run an HTTP compression script 39
Enabling SSL 40
To enable SSL for logon.aspx 40
To enable SSL for web.config 40
Load-balancing 41
To edit the machine.config file 43
To add a user account to the IIS Worker Process Group 43
To edit the registry to allow for remote connections 43
To point a server at a static IP address 43
To add shared folders 44
To copy chart preview files into the chart preview shared folder 44

To copy default print jobs to the shared print jobs folder 44
To add a virtual directory using IIS Manager 45
To edit the local security policy 45
To add an application pool in IIS 45
To reset IIS 46
Modifying Web.Config File Settings 46
To edit the ProxyReportServer parameter 46
To edit the SSLOnlyForLogon parameter 46
To edit the SessionState parameter 47
Offloading the Documents Manager 47
To add a document repository 48
To install the Documents Manager 49
To increase timeout settings for Documents Manager 49
Running SQL 2000 and SQL 2005 Reporting Services Side-by-Side 50

Overview

Serena Project Portfolio Management 2009 R1 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 2009 R1, 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 2009 R1 in your organization:

- **Serena Project Portfolio Management 2009 R1 on demand** The on demand version of Project Portfolio Management 2009 R1 shares the same set of project management, configuration, and collaboration features as the on premise version of Project Portfolio Management 2009 R1, including custom reporting, configuration options, and more. Some of the advantages of using the on demand version of Project Portfolio Management 2009 R1 include using the same features as the on premise version of Project Portfolio Management 2009 R1, never having to deploy hardware and software, and not needing to apply a patch or an update, or perform a migration. For small organizations, such as departmental teams and small business, this can be an advantage. To learn more about the on demand version of Serena Project Portfolio Management 2009 R1, see http://www.serena.com/products/mariner/.
- **Serena Project Portfolio Management 2009 R1 on premise** Larger organizations, or those who want to keep their Project Portfolio Management 2009 R1 deployment in-house, use Microsoft Windows Server 2003 technologies like fail-over, clustering, or load-balancing, then you will want to deploy the on premise version of Serena Project Portfolio Management 2009 R1. To learn more about how to deploy and configure an on premise version of Project Portfolio Management 2009 R1, 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 2009 R1 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.

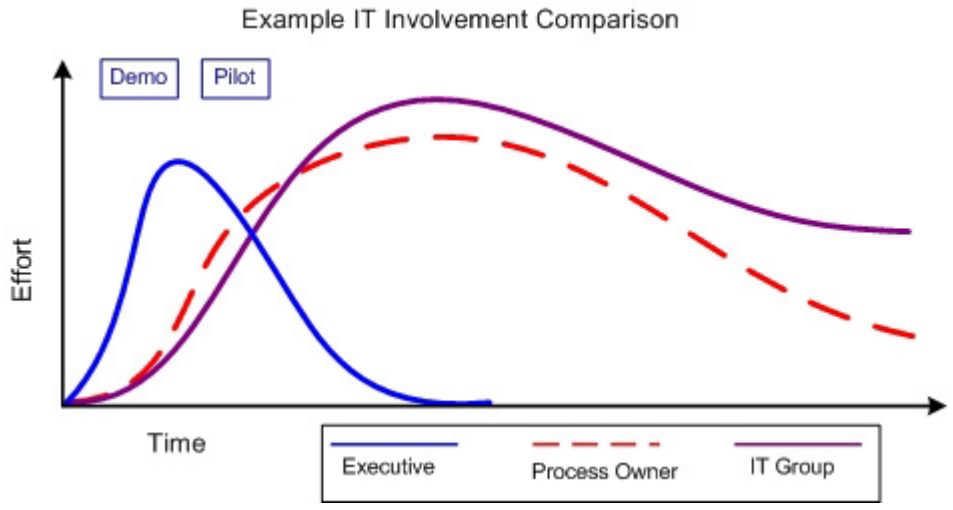
An important part of this process is for your organization to identify common usage patterns (including number of users, user roles, and security requirements), estimated data loads and network usage, and average/peak system usage. Use these measurements to help identify the Project Portfolio Management 2009 R1 configuration that will work best for your organization.

After you have a high-level understanding of what your Project Portfolio Management 2009 R1 deployment will look like (who will be using Project Portfolio Management 2009 R1, how often, and when), the next step is to deploy a Project Portfolio Management 2009 R1 in a baseline configiration. 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 2009 R1 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 (eventually) into a production environment that meets your organization's business goals and requirements and into a project management application which everyone in your organization will use.

Involving the IT Group

For many enterprise software deployment processes, such as installing Project Portfolio Management 2009 R1, 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 2009 R1 should be deployed, including helping to define how Project Portfolio Management 2009 R1 will be used to help address specific business needs and how it should be configured so that Project Portfolio Management 2009 R1 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 2009 R1 by driving the vision for what will become an IT implementation project. At this level, IT group representatives work with the executives to define the requirements and scope of the deployment and to allocate the budget and 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 2009 R1 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 2009 R1 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 2009 R1 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 2009 R1, 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 2009 R1.
- **Network configuration and topology** Project Portfolio Management 2009 R1 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 2009 R1 deployment.

- **Project Portfolio Management 2009 R1 server processor capabilities** Project Portfolio Management 2009 R1 server transactions can be processor-intensive. Faster processor speeds will translate directly into improved performance.
- **Project Portfolio Management 2009 R1 software configuration** Project Portfolio Management 2009 R1 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 2009 R1 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 2009 R1 (such as the application server and the database server) on to dedicated server hardware.

Project Portfolio Management 2009 R1 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:

1. **WAN capabilities** When Project Portfolio Management 2009 R1 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.
2. **Existing network infrastructure** Deploying Project Portfolio Management 2009 R1 may require upgrades or modifications to existing infrastructure to support the additional bandwidth requirements.
3. **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 2009 R1 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.
4. **Availability** This can be as much a business requirement as a performance requirements. Project Portfolio Management 2009 R1 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.
5. **Maintenance** Maintenance costs are important when considering not only the initial configuration of Project Portfolio Management 2009 R1, 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.
6. **Cost constraints** Hardware budgets are one of the biggest factors in deployment tradeoffs. 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 2009 R1 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 2009 R1 deployment, including:

- **Number of users** A user is any person who is licensed to log on to Project Portfolio Management 2009 R1. A full license provides greater potential access to Project Portfolio Management 2009 R1 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 2009 R1, what types of licenses they need, and what types of activities these users will need to perform after they have accessed Project Portfolio Management 2009 R1 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 2009 R1 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 2009 R1 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 2009 R1 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 2009 R1 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 2009 R1 functionality. Deep portfolio analysis, for example, 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 2009 R1, including incorporating any of your organization's IT policies for databases and

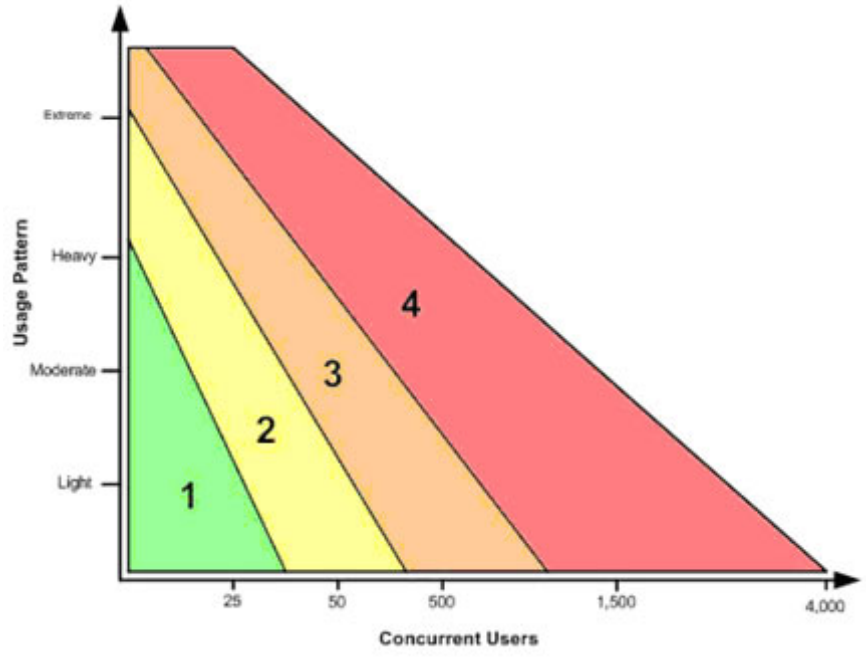
application servers. For example, do you need to cluster the database or provide fail-over capabilities? Do Web applications need to be installed in a load-balanced configuration?

- **Scaling up** Scaling up is a strategy that running the Project Portfolio Management 2009 R1 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 2009 R1 deployment and will improve the overall user experience.
- **Scaling out (load balancing)** Scaling out your Project Portfolio Management 2009 R1 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 2009 R1 is scaled out, clients will continue to access the system via 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 2009 R1 deployment. As your organization's requirements increase, additional servers can be added to the load balanced configuration. Three components of Project Portfolio Management 2009 R1 can be load-balanced: Project Portfolio Management 2009 R1 Web Server, Project Portfolio Management 2009 R1 Reports, and Project Portfolio Management 2009 R1 Documents Manager (if your organization has offloaded from the Project Portfolio Management 2009 R1 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 Advanced Server 2000 and Windows Server 2003. 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 Mairner 2008 deployment: your data. A clustering or fail-over strategy helps ensure that when users access Project Portfolio Management 2009 R1, they can access the data that is stored in the Project Portfolio Management 2009 R1 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.

Scalability Zones

There are four zones. **Zone 1** represents low concurrency and simple configuration and usage patterns. **Zone 4** is highest end of the spectrum, representing high concurrent user load and complex data and usage patterns.



As you can see, your organization's usage patterns have a dramatic effect on the complexity of your configuration decision making process. The following table the usage pattern details used in the image above:

Usage pattern	Number of items	User operations per minute
Light	100-700	1-5
Moderate	700-2,000	3-10
Heavy	2,000-7,000	7-15
Extreme	7,000-20,000	12-25

The table below maps performance zones to recommended Project Portfolio Management 2009 R1 Web server configurations. This table can be used as a starting point for determining appropriate server configurations based on usage patterns and expected number of concurrent users. As a general rule, as the zones increase, the hardware requirements for the servers in your organization increase.

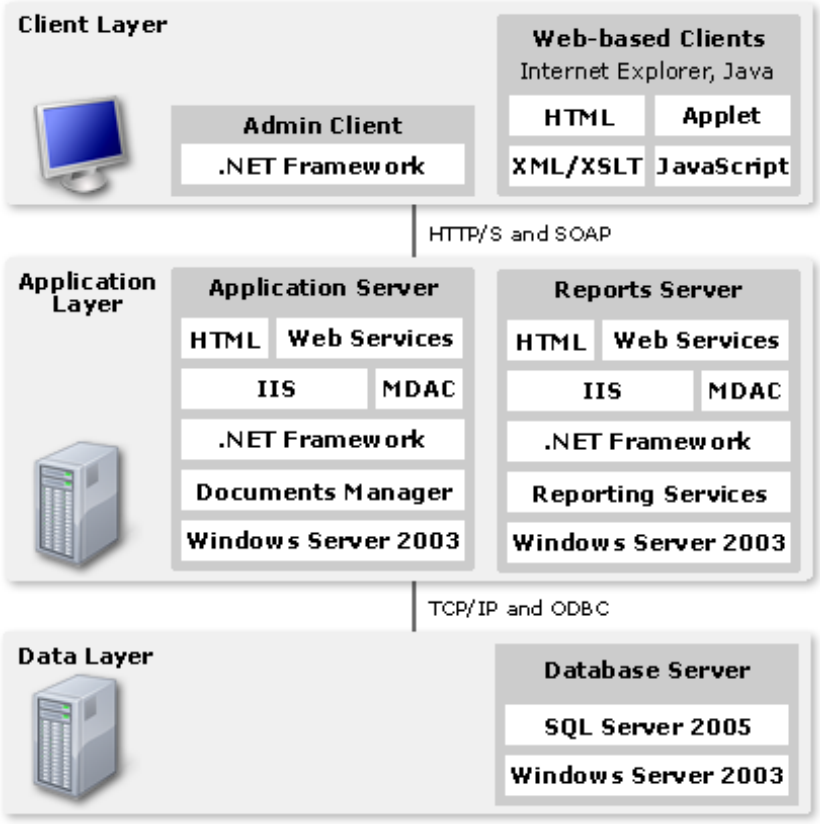
Zone	Description
1	Standard deployment for the on premise version. If your organization fits within this zone, you should consider the on demand version of Project Portfolio Management 2009 R1.

Zone	Description
2	Standard deployment for the on premise version, but with more capable hardware for the Project Portfolio Management 2009 R1 Web Server and Project Portfolio Management 2009 R1 Database components. If your organization fits within this zone, you should consider the on demand version of Project Portfolio Management 2009 R1.
3	Standard deployment for the on premise version; consider load-balancing the Project Portfolio Management 2009 R1 Web Server and/or acquiring robust server hardware for all Project Portfolio Management 2009 R1 components. Work with Serena Professional Services during the planning phase to help ensure a successful deployment.
4	Standard deployment, but on very robust server hardware and applying many (or all) of the performance optimizations. Work closely with Serena Professional Services during the planning, deployment, and configuration phases to help ensure a successful deployment.

Overview of Server Components

From a hardware and software perspective, Project Portfolio Management 2009 R1 has a relatively simple deployment story. Before deploying Project Portfolio Management 2009 R1, you should understand the four components of Project Portfolio Management 2009 R1, 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 2009 R1 components, and the different configuration options that are available. Before installing any component of Project Portfolio Management 2009 R1, 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 2005 (and/or SQL Server 2005 Reporting Services), and other software prerequisites (such as components like IIS or ASP.NET) on to the computers that will be running the various components of Project Portfolio Management 2009 R1.

Project Portfolio Management 2009 R1 has three layers (client, application, and data) and four components (client, application, reports, and database).



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 2009 R1 will be configured to address your needs.

Web Server

The Project Portfolio Management 2009 R1 Web server is the core Project Portfolio Management 2009 R1 component in a deployment. Project Portfolio Management 2009 R1 uses Microsoft .NET Framework, version 2.0 and leverages many of its enterprise application capabilities, including memory management, database access, and Web services. Project Portfolio Management 2009 R1 Web services are built on ASP.NET 2.0 and are hosted in Microsoft Internet Information Services (IIS). Project Portfolio Management 2009 R1 reports leverage Microsoft SQL Server 2005 and SQL Reporting Services, in addition to using Web services.

The Project Portfolio Management 2009 R1 Web server includes a core set of services that determine how users can to interact with Project Portfolio Management 2009 R1, 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 2009 R1 for users of the Project Portfolio Management 2009 R1 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 2009 R1.
- **Security Services** This service determines which areas of Project Portfolio Management 2009 R1 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 2009 R1 through email. Notification services require Microsoft Message Queuing (MSMQ), which runs as a local system account and at a normal thread priority.
- **Scheduling services** Scheduling services are responsible for starting scheduled jobs in Project Portfolio Management 2009 R1. The service itself runs as a local system account and at a normal thread priority.
- **Documents manager** The Project Portfolio Management 2009 R1 documents manager provides document storage and management functionality in Project Portfolio Management 2009 R1. 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	1 x 2.0 GHz Intel dual core processor or better; 2 x 2.0 GHz processors recommended
Memory (RAM)	1.0 GB per processor; 2.0 GB recommended

Category	Minimum Requirement
Hard Disk Space	30 GB hard disk space; Project Portfolio Management 2009 R1 requires a minimum of 1.0 GB hard disk space for installation
Operating System	Microsoft Windows 2000 Server SP4 or later, and all critical updates, or Microsoft Windows Server 2003 SP2 (recommended) and all critical updates
Connectivity	Microsoft Data Access Components (MDAC) 2.8 SP1 or later
Internet	Microsoft Internet Information Services (IIS) 6.0
Database	Microsoft SQL Server 2005, SP2 or later; Microsoft SQL Server 2005 Reporting Services, SP2 or later. (SQL Server 2000 and SQL Server 2000 Reporting Services are not supported.)
Framework	Microsoft .NET Framework 2.0
ALM Integration	Microsoft Visual C++ 2005 SP1 Redistributable Package (x86) and Java VM.

Reports

The Project Portfolio Management 2009 R1 report server is both a database and application server that provides the reporting functionality of Project Portfolio Management 2009 R1. It requires SQL Server 2005 Reporting Services and access to the Project Portfolio Management 2009 R1 database.

Prerequisites: Reports

If your server has sufficient capacity, the Project Portfolio Management 2009 R1 reports server can be installed on the same computer as the Project Portfolio Management 2009 R1 Web server. If you put the Project Portfolio Management 2009 R1 Web server and the Project Portfolio Management 2009 R1 reports server on the same hardware, use the recommended requirements as your organization's sizing baseline.

Category	Minimum Requirement
CPU	1 x 2.0 GHz Intel dual core processor or better; 2 x 2.0 GHz processors recommended
Memory (RAM)	1.0 GB per processor; 2.0 GB recommended
Hard Disk Space	30 GB hard disk space; Project Portfolio Management 2009 R1 requires a minimum of 1.0 GB hard disk space for installation
Operating System	Microsoft Windows 2000 Server SP4 or later, and all critical updates, or Microsoft Windows Server 2003 SP2 (recommended) and all critical updates

Category	Minimum Requirement
Connectivity	Microsoft Data Access Components (MDAC) 2.8 SP1 or later
Internet	Microsoft Internet Information Services (IIS) 6.0
Database	Microsoft SQL Server 2005, SP2 or later; Microsoft SQL Server 2005 Reporting Services, SP2 or later. (SQL Server 2000 and SQL Server 2000 Reporting Services are not supported.)
Framework	Microsoft .NET Framework 2.0

Database

Project Portfolio Management 2009 R1 uses a SQL Server 2005 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 2009 R1 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 2009 R1. The Project Portfolio Management 2009 R1 database is a data-intensive application. To help ensure that the Project Portfolio Management 2009 R1 database has adequate resources available to it, the average CPU utilization on the server running SQL Server 2005 (and the Project Portfolio Management 2009 R1 database) should be less than 25% of total CPU capacity (before the Project Portfolio Management 2009 R1 database is added).

Category	Minimum Requirement
CPU	1 x 2.0 GHz Intel dual core processor or better; 2 x 2.0 GHz processors recommended
Memory (RAM)	1.0 GB per processor; 2.0 GB recommended
Hard Disk Space	300 GB hard disk space; Project Portfolio Management 2009 R1 requires a minimum of 1.0 GB hard disk space for installation
Operating System	Microsoft Windows 2000 Server SP4 or later, and all critical updates, or Microsoft Windows Server 2003 SP2 (recommended) and all critical updates
Connectivity	Microsoft Data Access Components (MDAC) 2.8 SP1 or later
Database	Microsoft SQL Server 2005, SP2 or later; SQL Server 2000 is not supported

Clients

Project Portfolio Management 2009 R1 has a zero-footprint client. That is, the user interface is implemented using HTML, JavaScript, and AJAX (Asynchronous JavaScript and XML) and requires no client installation. This means that any computer that is running Microsoft Internet Explorer 7.0 (recommended) or Internet Explorer 6.0 or later can access Project Portfolio Management 2009 R1. 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 a much faster, and more seamless user experience.

Project Portfolio Management 2009 R1 has three client applications:

- **Desktop client** Users access Project Portfolio Management 2009 R1 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 2009 R1. The Project Portfolio Management 2009 R1 desktop client interacts with the Project Portfolio Management 2009 R1 application server by using HTTP. This enables deployment across a wide variety of network topologies.
- **Administration client** The Project Portfolio Management 2009 R1 administration client is a small, Windows-based application that is built using Microsoft .NET Framework, version 2.0. This administrative client is used only to manage licenses and LDAP user synchronization; all other administrative functions are managed in Project Portfolio Management 2009 R1 through the desktop client.
- **Project Portfolio Management 2009 R1 Connector for Microsoft Project** The Project Portfolio Management 2009 R1 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 2002, 2003, and 2007 are supported.
- **Project Portfolio Management 2009 R1 OLEDB Provider** The Project Portfolio Management 2009 R1 OLEDB Provider is a data service that allows users to access Project Portfolio Management 2009 R1 data with applications such as Microsoft Office Excel 2003.

Prerequisites: Clients

This section provides you with the deployment prerequisites for the Project Portfolio Management 2009 R1 clients. The performance of Project Portfolio Management 2009 R1 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 1.0 GHz Intel or better; 2.0 GHz (recommended)
Memory (RAM)	1.0 GB; 2.0 GB (recommended)

Category	Minimum Requirement
Resolution	1024 x 768; 1280 x 1024 (recommended)
Operating System	Microsoft Windows 2000 Professional SP4 or later, Microsoft Windows XP Professional SP2 or later, or Microsoft Vista Business, Enterprise, or Ultimate, plus any critical updates
Browser	Microsoft Internet Explorer 8.0, 7.0 (recommended), 6.0 (with MSXML 4.0 SP2)
Java	Java desktop client, verion 1.6.14+
PDF Viewer	Adobe Acrobat Reader 6.0, or later
Framework	Microsoft .NET Framework 2.0 (only required for the local installation of the Microsoft Administration module)
Microsoft Project	Microsoft Project 2002, Microsoft Office Project 2003, or Microsoft Office Project 2007 to use the Project Portfolio Management 2009 R1 Connector

Project Portfolio Management 2009 R1 Deployment Scenarios

Project Portfolio Management 2009 R1 has four primary deployment scenarios:

- **on demand / Trial version** The on demand version of Project Portfolio Management 2009 R1 contains the same project and resource management capabilities as the on premise version of Project Portfolio Management 2009 R1. (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 2009 R1 is a practical alternative to an on premise deployment. If your organization wants to test the new features available in Project Portfolio Management 2009 R1, you should use the trial, on demand version of Project Portfolio Management 2009 R1. If your organization wants to test Project Portfolio Management 2009 R1 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 2009 R1 deployment is built around a database server running SQL Server 2005, a reporting server running SQL Server 2005 Reporting Services, and a Web server running the Project Portfolio Management 2009 R1 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 2009 R1 deployment.
- **Migrating to Project Portfolio Management 2009 R1 from Mariner 6.2** You can migrate to Project Portfolio Management 2009 R1 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 2009 R1 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 2009 R1 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 2009 R1 Web Server, working directly with configuration files, or working directly with the HTTP compresion scripts (which are enabled automatically by Project Portfolio Management 2009 R1). It should be noted that few Project Portfolio Management 2009 R1 customers will need to use any of these advanced options.

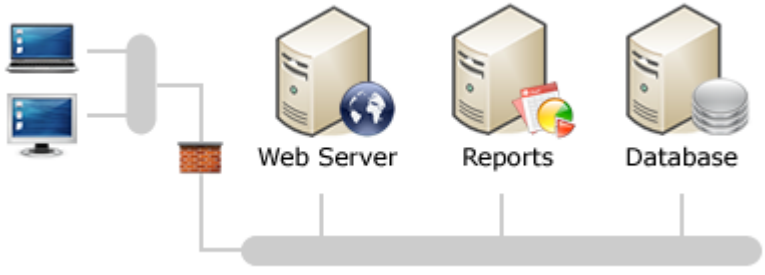
Trial Version

The on demand version of Project Portfolio Management 2009 R1 shares the same set of project management, configuration, and collaboration features as the on premise version of Project Portfolio Management 2009 R1, including custom reporting, configuration

options, and more. Some of the advantages of using the on demand version of Project Portfolio Management 2009 R1 include using the same features as the on premise version of Project Portfolio Management 2009 R1, never having to deploy hardware and software, and not needing to apply a patch or an update, or perform a migration. To learn more about the on demand version of Serena Project Portfolio Management 2009 R1, see http://www.serena.com/products/mariner/.

Standard on premise Deployment

The standard deployment for Project Portfolio Management 2009 R1 relies on dedicated hardware for the three primary components of Project Portfolio Management 2009 R1: Project Portfolio Management 2009 R1 Web Server, Project Portfolio Management 2009 R1 Reports Server, and Project Portfolio Management 2009 R1 Database Server. All other components, such as Project Portfolio Management 2009 R1 Notifications and Project Portfolio Management 2009 R1 Documents Manager, are run as part of the Project Portfolio Management 2009 R1 Web Server component.



The standard deployment applies to all Project Portfolio Management 2009 R1 on premise deployments, including migrations from previous versions, and including advanced scenarios such as load-balancing the Project Portfolio Management 2009 R1 Web Server or offloading the Project Portfolio Management 2009 R1 Documents Manager.

Installing the Database Server

The Project Portfolio Management 2009 R1 Database Server is installed on a server that is running Microsoft SQL Server 2005, SP2. 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 2005 and SQL Server 2005 SP2. Accept all of the default settings.

	Checklist item
	Create a SQL Server account for Project Portfolio Management 2009 R1. 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 2009 R1-specific account should be created on the server on which the Project Portfolio Management 2009 R1 database resides.

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 Reports Server

The Project Portfolio Management 2009 R1 Report Server is installed on a server that is running Microsoft SQL Server 2005 Reporting Services, SP2. 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.
	Install the Microsoft .NET Framework 2.0. (Windows Server 2000 only.)
	Install SQL Server 2005 Reporting Services and SQL Server 2005 Reporting Services SP2. For more information: http://msdn.microsoft.com/en-us/library/ms143516(SQL.90).aspx
	Create a user account called IUSR_servername (where servername is the name of the Project Portfolio Management 2009 R1 server) and assign this user account Content Manager permissions.

	Checklist item
	Enable anonymous access for the IUSR_servername user account for the Reports and Report Server virtual directories in IIS.
	Ensure that .NET 2.0 is the selected version for the Reports and Report Server virtual directories in IIS.
	Install the Project Portfolio Management 2009 R1 Reports Server.
	After the Project Portfolio Management 2009 R1 Web Server is installed and configured, verify the configuration of the Project Portfolio Management 2009 R1 Reports Server and that reports are running properly. Use SQL Server 2005 Reporting Services Report Manager to verify the configuration of the Project Portfolio Management 2009 R1 Reports Server.
	After the Project Portfolio Management 2009 R1 Reports Server is configured and running, reduce the permissions for the IUSR_servername user account.
	Increase timeout settings for reports generation from Project Portfolio Management 2009 R1 (optional; recommended if the Project Portfolio Management 2009 R1 Reports Manager is installed on a server running Windows Server 2000). Modify the machine.config file to increase the timeout and memory limits.

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. In the **Isolation mode** section, clear the **Run WWW service in IIS 5.0 isolation mode** checkbox. (The **Run WWW service in IIS 5.0 isolation mode** check box is only selected if you have upgraded to IIS 6.0 on Microsoft Windows Server 2003 from IIS 5.0 on Windows 2000 Server. New installations of IIS 6.0 default to IIS 6.0 worker process isolation mode.)
5. 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 add the IUSR_servername account

1. On the server you installed SQL Server Reporting Services, log on to Reporting Services as an administrator.
2. Navigate to **http://servername/reports/pages/folder.aspx**.
3. Click the **Properties** tab.
4. Click **New Role Assignment**.
5. In the **Group** or user name box, type the **IUSR_servername**, and then under **Role**, select the **Browser**, **Content Manager**, and **Publisher** check boxes.
6. Click **OK**.

To enable anonymous access

1. Click **Start**, point to **Administrative Tools**, and then click **Internet Information Services (IIS) Manager**.
2. Expand **Internet Information Services (IIS)**.
3. Expand **Web Sites**, expand **Default Web Site**, right-click **Reports**, and then click **Properties**.
4. On the **Directory Security** tab, under **Authentication** and access control, click **Edit**.
5. Make sure the **Enable Anonymous Access** and **Integrated Windows Authentication** check boxes are selected, and then click **OK**.
6. Click **OK** to close the **Reports Properties** dialog box.
7. On the **IIS Default Web Site** tree, right-click **ReportServer**, and then click **Properties**.
8. Repeat steps 4-6.
9. In **IIS Manager**, right-click the name of the server, point to **All Tasks**, and then click **Restart IIS**.

To install the Reports 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, accept 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. 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 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.

To reduce IUSR_servername account permissions

1. On the server where you installed SQL Reporting Services, log on as Administrator.
2. Navigate to **http://*servername*/Reports/Pages/Folder.aspx**.
3. On the **Properties** tab, next to the **IUSR_*servername*** account, click **Edit**.
4. Under **Role**, clear the **Content Manager** checkbox, and then click **Apply**.

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.

Installing the Web Server

This should be done for all servers on which the Project Portfolio Management 2009 R1 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 2.0.
	Allow ASP.NET applications. The ability to run ASP.NET applications is not allowed by default in Windows Server 2003; Project Portfolio Management 2009 R1 requires that ASP.NET applications be allowed to run.
	Install the Microsoft .NET Framework 2.0. (Windows Server 2000 only.)
	Install Microsoft Data Access Components (MDAC) 2.8, SP1 or later.
	Install Microsoft Message Queuing (MSMQ) (optional). This is required to use Project Portfolio Management 2009 R1 notifications. Remote private queues are not supported. If you are installing MSMQ on a server running Windows Server 2000, you need to add a "$" symbol to the notification queue path that is defined on the **Notification Settings** tab in the **Environment Settings** view of the Project Portfolio Management 2009 R1 **Configuration** module.
	Create and configure permissions for the Project Portfolio Management 2009 R1 documents repository. Proper permissions are Share (Change) and NTFS (Modify).
	Install the Project Portfolio Management 2009 R1 Web Server (including the Project Portfolio Management 2009 R1 Documents Manager).

	Checklist item
	Create and connect to the Project Portfolio Management 2009 R1 database. You must create the Project Portfolio Management 2009 R1 database and establish a connection from the Administration module. This also sets the administrator password for the default "peadmin" account. Project Portfolio Management 2009 R1 uses a SQL Server account to instantiate and use this database connection. It is recommended that you create a Project Portfolio Management 2009 R1-specific account in SQL Server to facilitate communication between Project Portfolio Management 2009 R1 and the database.
	Create the Project Portfolio Management 2009 R1 Documents Manager database. This database stores metadata and associated information about documents that are uploaded to Project Portfolio Management 2009 R1. The actual files are stored in the repository.
	Configure Project Portfolio Management 2009 R1 reporting using the **Environment Settings** view in the Project Portfolio Management 2009 R1 **Administration** module.
	Log on to Project Portfolio Management 2009 R1 and verify your configuration.
	Verify that Project Portfolio Management 2009 R1 can connect to the Project Portfolio Management 2009 R1 Reports Server and that reporting is installed correctly.
	Verify that Project Portfolio Management 2009 R1 can connect to the Project Portfolio Management 2009 R1 Documents Manager and that the document repository is functional.
	Restore an IT accelerator (optional). An IT accelerator is a database that comes pre-configured with a number of settings and data. An IT accelerator is provided as a backup of a SQL database. If your organization purchased an IT accelerator, you will need to restore it as part of your deployment process.

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. In the **Isolation mode** section, clear the **Run WWW service in IIS 5.0 isolation mode** checkbox. (The **Run WWW service in IIS 5.0 isolation mode** check box is only selected if you have upgraded to IIS 6.0 on Microsoft Windows Server 2003 from IIS 5.0 on Windows 2000 Server. New installations of IIS 6.0 default to IIS 6.0 worker process isolation mode.)
5. 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 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. Select **ASP.NET Machine Account (servername\ASPNET)**, and then under **Allow**, select the **Modify** check box.
13. Click **OK**.

To install Project Portfolio Management 2009 R1

1. Start Project Portfolio Management 2009 R1 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, 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 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 **Mariner**, 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 the document repository administrator password for the database.
11. Under **Creation**, select **Database and tables**, **Only connection**, **Only tables**, or **Create database SQL/DDL script file**. Then type the database administrator user name in the **Database User Name** box, and the Documents Manager 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.
13. Under **Select Connection**, click the database connection name, and then click **OK** to log on to Documents Manager Administration. Once the initial Documents Manager database connection is established, you can modify the database connection and add additional databases.

To add a database connection

1. Double-click **Administration** shortcut on the desktop, or click **Start**, point to **All Programs**, point to **Serena**, point to **Project Portfolio Management 2009 R1**, 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 configure reports settings

1. Open the **Administration** module.
2. Select the **Environment Settings** view.
3. On the **System Settings** tab, under **Reporting Settings**, in the **Report Server** box, enter the path to the reporting server, e.g. http://<reporterservername>/ReportServer.
4. In the **Reports Root** box, enter **/PESReports**.
5. In the **Report Service Path** box, type**/ReportService.asmx**.
6. Click **Save**.

To restore a database from a backup file

1. Open **SQL Server Management Studio**.
2. Expand **Databases**.
3. Right-click the database you want to restore, point to **Tasks**, point to **Restore**, and then select **Database**.
4. In the **Restore Database** dialog box, on the **General** page, select the database you want to restore and the location in which the backup file is located, and then click **OK**.
5. On the **Options** page, ensure that the backup is pointing to the appropriate path on your system, for example: c:\Program Files\Microsoft SQL Server\MSSQL\Data.
6. Select the **Overwrite the existing database** check box and click **OK**.
7. When the restore operation is finished, click **OK**.

Installing Clients

Unless noted, all items in the checklist are required.

	Checklist item
	Install Microsoft Internet Explorer 7.0 (recommended) or Internet Explorer 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 2009 R1 from a server that has Project Portfolio Management 2009 R1 installed).
	Add Project Portfolio Management 2009 R1 to the list of local sites.
	Log on to Project Portfolio Management 2009 R1 and verify that you can access Project Portfolio Management 2009 R1.

	Checklist item
	After Project Portfolio Management 2009 R1 is installed, users can download the Project Portfolio Management 2009 R1 Connector for Microsoft Project from the Settings page.
	Delete temporary Internet files (clear the browsing cache) (optional, but recommended periodically or when upgrading from Mariner 6.2 to Project Portfolio Management 2009 R1).

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**.

Migrating to Project Portfolio Management 2009 R1

You can migrate from previous versions of Project Portfolio Management 2009 R1 (known as Mariner 6.2, Mariner 2008 R1, Mariner 2008 R2, and Mariner 2008 R3). Databases can be migrated after the application component upgrades have been completed. The upgrade path is from major version to major version. For example, if your organization is migrating from Mariner 6.2 to Project Portfolio Management 2009 R1, then you must first migrate to Mariner 2008 R1, and then migrate to Mariner 2008 R2, and then migrate to Mariner 2008 R3 before migrating to Project Portfolio Management 2009 R1. For each version, you must use the migration tool that is specific to the version to which you are migrating.

The current version of 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

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 Mariner 6.2, it is recommended that any custom reports developed in SQL Reporting Services (SSRS) be upgraded from SSRS 2000 to SSRS 2005.

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 Deployment. For each of the migrations between versions, follow the same steps as outlined below.

	Checklist item
	Perform a full system backup, including the databases. You will need the backup of your database; during the migration it must be restored to a server which is running SQL Server 2005.
	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.
	Uninstall the migration tool. This can be done through the Control Panel.
	Backup custom item request pages (IRPs). Any custom Item Request Pages (IRP) that your organization uses will be lost during the migration. These pages can be retained by backing up the IRP directory prior to initiating the migration process. Once the migration is complete, the custom item request pages can be restored and new connections made.
	Backup custom reports. After the migration is complete, you can upload them into SQL Server 2005 Reporting Services. Custom reports that worked in previous versions may require additional updates for them to work properly. For more information: http://msdn.microsoft.com/en-us/library/ms159153.aspx
	Uninstall all Mariner 6.2, Mariner 2008 R1, or Mariner 2008 R2 server components (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 administration module on the location from which the migration will be run. For example, if you are running the migration from a client computer, install the administration module on the same client computer.
	Install the migration tool on the location from which the migration will be run.
	Install the application. Follow the steps under Standard Deployment for each of the Mariner components. If you are installing the application to the same hardware that is already running a previous version of Mariner, many of the screens in the installation wizard will be pre-populated with data based on the settings that already exist in your environment.

	Checklist item
	Create and connect to the 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.
	Run the migration tool against each of the databases that you wish to migrate. If your organization purchased the IT Accelerator as part of your migration, that accelerator comes as a pre-configured database that includes many important settings. This database is provided as a SQL backup file from the Serena FTP site. You may also have provided your database to Serena Professional Services or Serena Support to aid in the migration process. You need to restore this database to the database server prior to deploying the application.
	After the Web Server is installed and configured, verify the configuration of the Reports Server and that reports are running properly. Use SQL Server 2005 Reporting Services Report Manager to verify the configuration of the Reports Server. Upload reports to the folder in SQL Server 2005 Reporting Services that contains the reports, for example: /PESReports/Mariner2008. For more information: http://msdn.microsoft.com/en-us/library/ms159153.aspx
	Restore custom item request pages (IRPs). Once the migration is complete, the custom item request pages that you backed up above can be restored and new connections made in the administration module.
	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**.
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 2000 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 and not required.
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 Mariner. 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 database connection

1. Double-click **Administration** shortcut on the desktop, or click **Start**, point to **All Programs**, point to **Serena**, point to **Project Portfolio Management 2009 R1**, 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 migrate a Mariner 6.2 database to Project Portfolio Management 2009 R1

1. Run the 2008 migration tool. It is located in the c:\Program Files\Serena\Marinre Migration folder.
2. To begin the migration, in the **Database** list, select the database to migrate and then click Migrate. The database is updated and the progress is reported in the lower box. If you have more than one database, the migration tool needs to be run against each database individually.
3. On the Migration complete pop-up dialog, click **OK**.

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.

To restore 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**.
2. Restore the contents of that directory or copy your backed up item request pages into the new **InvestmentRequest** directory.
3. Open the **Configuration** module.
4. In the **Item Setup** view, click the **IRP** tab.
5. Recreate each item request, taking care to match the name, item type, and item location with its former value. The URL should remain unchanged.
6. You want to ensure that the URL shortcuts used by end users is still valid. For example, if the item request page prior to migrating was located at **http://*servername*/Mariner/InvestmentRequest/InvestmentRequest.aspx?DBTitle=Sample&PageId=4**, the URL should be valid. If the PageId changes to, say "5", you will need to update the shortcuts to this page.

Uninstall

You can use the setup wizard to uninstall Project Portfolio Management 2009 R1.

Note: Even though it is presented as an option, you cannot use the setup wizard to modify your Project Portfolio Management 2009 R1 install.

Configuration Options

When optimizing the performance of your Project Portfolio Management 2009 R1 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 2009 R1 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 2009 R1 deployment include:

- **Enabling HTTP compression** HTTP compression can be used to improve the performance of your Project Portfolio Management 2009 R1 Web Server by reducing latency, such as when Project Portfolio Management 2009 R1 is accessed over a wide area network (WAN). Compression reduces the size of the HTTP response from the server to the client, which in turn reduces the amount of bandwidth required to maintain a connection. HTTP compression is enabled by default in Project Portfolio Management 2009 R1.
- **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 2009 R1 data may not require that level of security, especially considering the potential performance implications. Project Portfolio Management 2009 R1 should be enabled to use SSL for user authentication only.
- **Load-balancing Project Portfolio Management 2009 R1** Project Portfolio Management 2009 R1 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 2009 R1 web.config file settings** In addition to all of the standard functions that a web.config file provides, Project Portfolio Management 2009 R1 uses it to manage options such as allowing users to access the Project Portfolio Management 2009 R1 Reports server through a proxy, requiring SSL for user authentication only, and disabling cookies.
- **Offoading the Project Portfolio Management 2009 R1 Documents Manager from the Project Portfolio Management 2009 R1 Web Server** This is most easily done during your initial deployment, but it can be done at any time. The Project Portfolio Management 2009 R1 Documents Manager is a respository for documents associated with items that have been uploaded to Project Portfolio Management 2009 R1 by users in your organization. This server can be deployed as a stand alone server or as part of any load balanced configuration.
- **Running SQL Server 2000 Reporting Services and SQL Server 2005 Reporting Services side-by-side** If your organization is running SQL Server 2005 Reporting Services as a second instance on the same server that is already running SQL Server 2000 Reporting Services, you will need to add a version key (if one was not automatically created).

Enabling HTTP Compression

HTTP compression is enabled during the installation of Project Portfolio Management 2009 R1. It is recommended that HTTP compression remain enabled as the default state in your organization, but it can be managed manually.

During the installation of Project Portfolio Management 2009 R1, HTTP compression is enabled as part of the installation process as long as the **\inetpub\adminscript** folder contains the files **adsutil.vbs** and **synciwam.vbs**. If your installation of Project Portfolio Management 2009 R1 uses a non-default location, you should verify that the **\inetpub\adminscript** folder contains the files **adsutil.vbs** and **synciwam.vbs** before installing Project Portfolio Management 2009 R1. If these files are not present, HTTP compression will fail during Project Portfolio Management 2009 R1 installation; it will need to enabled manually after the installation of Project Portfolio Management 2009 R1 is complete.

HTTP compression uses the GZip filter (gzip.dll). The GZip filter relies on a collection of batch files (provided by Serena). The files used to manage HTTP compression settings are located in the **Support** directory on your Project Portfolio Management 2009 R1 installation media (**\Serena\Mariner\Support\EnableHTTPCompression.zip**). This .zip file contains the following files:

- **RunFindWebSiteID.bat** This batch file determines the numerical Web site identifier assigned to the Project Portfolio Management 2009 R1 Web site. In most cases, this value is 1. (You can also find this value in the details pane view for the Web Sites directory in IIS.)
- **EnableGZip.bat** This batch file enables HTTP compression for Project Portfolio Management 2009 R1. This batch file is enabled automatically.
- **DisableGZip.bat** This batch file disables HTTP compression for Project Portfolio Management 2009 R1.
- **EnableGzip.bat** This batch file enables the GZip filter.
- **DisableGzip.bat** This batch file disables the GZip filter.
- **AddHttpCustomHeaders.bat** This batch file enables image caching for Project Portfolio Management 2009 R1, which caches images locally on client machines. This batch file is enabled automatically.
- **DeleteHttpCustomHeaders.bat** This batch file disables image caching for Project Portfolio Management 2009 R1.
- **RunIISBackup.bat** This batch file backs up the IIS metabase before enabling HTTP compression.

To run an HTTP compression script

1. Right-click the batch file, and then click **Edit** (or open it in your favorite text editor.)
2. Ensure the default values for **Drive**, **ScriptPath**, **Website Identifier** and **Virtual Directory** are correct in the line **SupportFiles\EnableGzip.bat C: \InetPub\adminscripts 1 Mariner 9**. **Drive** refers to the drive on which the application is installed. **ScriptPath** is the location of native IIS scripts and will only be different if you installed IIS to a custom location. **WebSite Identifier** is the value obtained from running **RunFindWebSiteID**. **Virtual Directory** is the virtual directory. **CompressionLevel** refers to the level of compression that will be set; this value should not be changed.

3. Run the batch file. A command prompt window opens and the results are displayed.
4. Look though the results in the command prompt window and look for the indication of error conditions. Each script action will report individually. For example, if you enter the name of your virtual server as "Marinr", you will receive an error. In that case, return to the batch file file, correct the spelling to "Mariner," and re-run it.

Enabling SSL

Some organizations may require users to connect to and interact with Project Portfolio Management 2009 R1 over an encrypted channel. Enabling Secure Sockets Layer (SSL) encryption for all Project Portfolio Management 2009 R1 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 2009 R1 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 2009 R1 using SSL (https://), the rest of a user's session in Project Portfolio Management 2009 R1 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 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 2009 R1 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 2009 R1 Web server. After the installation process for the Project Portfolio Management 2009 R1 Web server is complete, there are additional steps that must be completed in order for Project Portfolio Management 2009 R1 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 2009 R1 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 2009 R1-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 2009 R1 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 2009 R1-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 2009 R1 in a load-balanced environment will require that one of the servers maintain session state. When Project Portfolio Management 2009 R1 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 2009 R1 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 2009 R1 Web Server.

	Checklist item
	For each server that will be part of the load-balanced environment, create a database connection.
	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 2009 R1 folder heirarchy in IIS and will enable all servers in the load-balanced environment to be able 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.

	Checklist item
	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 2009 R1 folder hierarchy in IIS and will enable all of the servers in the load-balanced environment to be able 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 2009 R1, 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 2009 R1:

- **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 2009 R1 Reports server to be done with a proxy.
- **SSLPnlyForLogon** Requires logon to Project Portfolio Management 2009 R1 to be done using SSL, but allows users (after they have logged on successfully) to navigate through Project Portfolio Management 2009 R1 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 2009 R1 Documents Manager is typically installed on the same server that is running the Project Portfolio Management 2009 R1 Web Server. However, some configurations may use the Project Portfolio Management 2009 R1 Documents Manager on dedicated hardware, such as when the Project Portfolio Management 2009 R1 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 2009 R1 documents repository. The documents repository is a shared folder on the Project Portfolio Management 2009 R1 Documents Manager. It should be called servername\ASPNET (where servername is the name of the Project Portfolio Management 2009 R1 Documents Manager server).
	Create and configure permissions for the Project Portfolio Management 2009 R1 documents repository. Proper permissions are Share (Change) and NTFS (Modify).
	Create the Project Portfolio Management 2009 R1 Documents Manager database. This database stores metadata and associated information about documents that are uploaded to Project Portfolio Management 2009 R1. The actual files are stored in the repository.
	Install the Project Portfolio Management 2009 R1 Documents Manager.
	Verify that you can upload documents to Project Portfolio Management 2009 R1.
	Increase timeout settings for uploading documents to the documents repository from Project Portfolio Management 2009 R1 (optional; recommended if the Project Portfolio Management 2009 R1 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 2009 R1 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 SQL 2000 and SQL 2005 Reporting Services Side-by-Side

When SQL Server 2005 Reporting Services is installed as a second instance on a server that is already running SQL Server 2000 Reporting Services, a version key may not be created. However, a version key is required in order for Project Portfolio Management 2009 R1 to recognize SQL Server 2005 Reporting Services.

In this scenario, you will need to add the following registry: In order for Project Portfolio Management 2009 R1 to recognize that SQL Server 2005 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 2005 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 2009 R1 points to the correct instance.