



ClockWork Enterprise 5 System Requirements rev 5.12

Overview

ClockWork consists of four main software components:

- The ClockWork server application is built on Microsoft WCF technology and provides a central point that all clients connect to;
- The ClockWork client application is a .NET based application installed on the client computers that provides the front-line interface for staff and administrative users. Updates are handled automatically through a web-based update system;
- The ClockWork web application is an ASP.NET based application that provides a front-line interface for some functionality to students and instructors. Functionality is provided through various modules built for different purposes.
- The ClockWork Appointment Sync supports either Microsoft Exchange or Google and optionally syncs all appointments to/from ClockWork (2-way mirror sync).

The online web modules offer complementary services to students and are available on and off campus. They provide a pluggable authentication system for students to use; stand-alone and LDAP / Active Directory modules are built in and a custom plug-in system is available if required.

ClockWork uses a Microsoft Sql Server database as the back-end. Sql Server 2008/2012 Express may be used at no cost if a Sql Server database server is not currently available. The Express version of Sql Server has some limitations when compared with the full version, including a maximum usage of one CPU, a maximum memory usage of 1GB, and a maximum database size of 10 GB. These limitations are not normally a hindrance for an average ClockWork implementation.

System Requirements

Application Server

ClockWork Server uses Microsoft Windows Communication Foundation (WCF) as the back-end for the application server software. WCF is a free Microsoft component on the server, similar to IIS, and runs in conjunction with IIS.

Application Server Requirements	
Processor	2GHz dual core or higher
Framework	<ul style="list-style-type: none"> .NET Framework 3.5 Service Pack 1 (SP1) Windows Communication Foundation (WCF) (this is located in the Windows "Add/remove features" area in Windows) IIS 7 or higher
SSL Certificate	<ul style="list-style-type: none"> Can be the same SSL certificate used for the web modules (below) if the Application Server is on the same machine as the Web Server (this is the recommended setup)
Memory	4GB or more recommended
Hard Disk	recommended 4GB of free space or more for installation
Ports	<ul style="list-style-type: none"> 808 (TCP) and 80 (HTTP) (open to client) 26 (SFTP) (server must download updates from a TechnoPro server – this feature is recommended but can be disabled if updates are to be downloaded manually)

Database Server

ClockWork uses Microsoft Sql Server as the back-end database, and is compatible with any of the 2005 or higher versions. The ClockWork database is intended to run from a server that hosts other databases for other applications; an automated backup schedule should be in place. A virtual machine may be used.

Database Server Requirements	
Software	Microsoft SQL Server 2005 or higher, any edition. Microsoft SQL Server 2008 or higher, any edition, is recommended
Hard Disk	25 GB minimum recommended for data. Actual data space requirements depend on usage. Backups will require additional space. It is recommended to store a copy of backups externally.
Sql Server user	<ul style="list-style-type: none"> One Sql Server user account with dbread and dbwrite permissions on the ClockWork database One Sql Server user account with truncate, create, and alter permissions on the ClockWork database (for installation and upgrading purposes)

Web Server

The ClockWork web modules can be installed on an existing web server along-side other applications. A virtual machine may be used.

Web Server Requirements	
Processor	2GHz dual core or higher recommended
Server-side language	<ul style="list-style-type: none"> • ASP.NET 3.5 Service Pack 1 (SP1) • IIS 7 or higher
Operating System	Any operating system that supports the http server and the Server-Side language specified above
Memory	4 GB or higher recommended
Hard Disk	2GB of free space for installation, plus sufficient free hard drive space to allow Windows/IIS to run smoothly.
SSL certificate	A signed SSL certificate is required for secure transmission of data over the Internet.

Client (Staff computer)

The client software is installed on each staff computer. The Microsoft .NET Framework 3.5 is a free Microsoft download. ClockWork software updates are provided through a built-in ClockWork-Server-based updating system and can be controlled/restricted at an administrative level.

Client (Staff) Requirements	
Processor	2GHz or faster recommended
Framework	.NET Framework 3.5 Service Pack 1 (SP1)
Operating System	Windows XP SP3 or later, Windows Vista, Windows 7, or Windows 8
Memory	4 GB or more is recommended
Hard Disk	2GB of free space or more for installation and updates
Display	SVGA (1024x768) or higher recommended
Other	Microsoft Word 2003 or higher

ClockWork Appointment Syncs (Server)

Outlook (Exchange) and Google Appointment Syncs are available. The sync will run as a Windows Service and perform full 2-way mirror syncs between ClockWork and Google or Exchange. Sync frequency is controlled by a setting.

ClockWork Appointment Sync Requirements	
Processor	2GHz dual core or higher recommended
Framework	.NET Framework 3.5 Service Pack 1 (SP1)
Operating System	<ul style="list-style-type: none"> • Windows 7 or higher • Windows Server 2008 or higher
Memory	4 GB or more is recommended
Hard Disk	1GB of free space or more for installation and updates

Combination: Application Server and Web Server (Server)

These requirements are recommended if the ClockWork Application and Web Servers will be running on the same machine.

ClockWork Appointment Sync Requirements	
Processor	2GHz dual core or higher recommended
Framework	.NET Framework 3.5 Service Pack 1 (SP1)
Operating System	<ul style="list-style-type: none"> Windows 7 or higher Windows Server 2008 or higher
Memory	6GB minimum, 8GB or more is recommended
Hard Disk	6GB of free space or more for installation and updates

Combination: Application Server and Appointment Sync (Server)

These requirements are recommended if the ClockWork Application server and ClockWork Appointment Sync will be running on the same machine.

ClockWork Appointment Sync Requirements	
Processor	2.4GHz dual core or higher recommended
Framework	.NET Framework 3.5 Service Pack 1 (SP1)
Operating System	<ul style="list-style-type: none"> Windows 7 or higher Windows Server 2008 or higher
Memory	6GB minimum, 8GB or more is recommended
Hard Disk	6GB of free space or more for installation and updates

Combination: Application Server, Web Server and Appointment Sync (Server)

These requirements are recommended if the ClockWork Application Server, Web Server, and Appointment Sync will be running on the same machine.

ClockWork Appointment Sync Requirements	
Processor	2.4GHz dual core or higher recommended
Framework	.NET Framework 3.5 Service Pack 1 (SP1)
Operating System	<ul style="list-style-type: none"> Windows 7 or higher Windows Server 2008 or higher
Memory	8GB minimum, 12GB or more is recommended
Hard Disk	10GB of free space or more for installation and updates

*** Please contact us for specific requirements if multiple ClockWork systems will be running from the same machine.**

ClockWork Licensing Specifications for IT information

Each Department that purchases ClockWork will be allowed the following:

1. Install a Test and Production version of the "ClockWork Database", the "ClockWork Server Application", the "ClockWork Web Server".
2. Department may install the "Software Client" on as many computers as they wish. The number of "Concurrent Licenses" purchased will dictate how many users can connect to ClockWork at the same time.