



Installation Guide

ER Management Suite
Version 3.10



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1. Introduction

The Installation Guide for ER Management Suite version 3.0 provides you with a step by step guide for the installation of the web application. As well as provide a number of best practices, tips, and suggestions to ensure that product is installed effectively; according to your environment. To get the most from this guide, you should be familiar with the concepts and configuration procedures for Windows 2003 with IIS Web Services and Microsoft SQL Server. Please refer to the Microsoft documentation on each of the relevant products.

For further information or to get white papers about some of the topics discussed in this document, visit the East River Software Web site at <http://www.eastriversoftware.com>.

Note: All terminology, product references, and recommendations are subject to change without notice.

1.1. Document Conventions

When installing the ER Management Suite web application, the documentation uses the following conventions:

Convention	Meaning
<i>Boldface Italics</i>	Commands, names of interface items such as text boxes, buttons, and user input fields.
<i>Italics</i>	Placeholders for information or parameters that you provide. For example, filename in a procedure means you type the actual name of a file. Italics also are used for new terms and the titles of books.
%SystemRoot%	The Windows system directory, which can be WTSRV, WINNT, WINDOWS, or other name you specify when you install Windows.
Monospace	Text displayed in a text file.
{ braces }	A series of items, one of which is required in command statements. For example, { yes no } means you must type yes or no. Do not type the braces themselves.

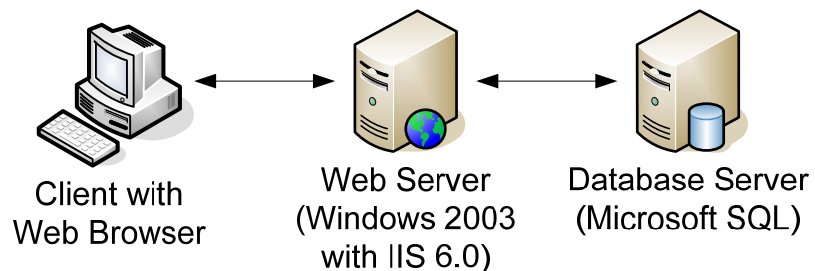


2. Planning Your Deployment

2.1. Architecture Overview

The ER Management suite is based on three tier architecture in that you have:

- Client Browser – Accesses the application through a web browser
- Web Server – Delivers the client browser the requested web page. Content on the web page is dynamic and may be different for each contact. The content is based on data obtained from the database server.
- Database Server – Stores all the data that the contacts have entered. Supplies the web server with the requested data.



The diagram shown above has the IIS Web Server and Database Server components on separate physical servers, this configuration allows you to apply server security based on role (for more information see <http://www.microsoft.com/windowsserver2003/technologies/security/configwiz/default.aspx>) ensuring the best possible security configuration.

But for smaller organizations such a solution may not be particular and while this configuration is not recommended it is possible to install Microsoft SQL on the same server as the IIS component.

2.2. Database Server Requirements

2.2.1. Operating System

The following database platforms are supported:

- Microsoft SQL Server 2000 SP4
- Microsoft SQL 2005

No additional components are required for Microsoft SQL Server.

2.2.2. Disk Space

The following amount of disk space is required for a blank database:

- Initial database size 7MB

The final amount of disk space that is required depends on the amount of data that is entered.

2.2.3. Memory

Memory plays an important part in the performance of the database server. The more memory that the database server has the more that it is able to



cache. Please refer to Microsoft SQL documentation and website on memory usage and improving SQL performance.

2.3. Web Server Requirements

2.3.1. Operating System

The following operating systems are supported:

- Windows 2003 x86 (Standard, Enterprise, or Datacenter Edition) with IIS www services installed.
- Windows 2003 x64 (Standard, Enterprise, or Datacenter Edition) with IIS www services installed.

The following additional components **MUST** also be installed on the web server.

- Microsoft AJAX .Net 2.0 Extensions 1.0 (available at <http://ajax.asp.net>)
- Microsoft .Net Framework 2.0 (available at <http://www.microsoft.com/downloads/details.aspx?FamilyID=0856EACB-4362-4B0D-8EDD-AAB15C5E04F5&displaylang=en>)

2.3.2. Disk Space

The following amount of disk space is required:

- Web files 8MB
- Contact Images - depends on the number and size of contact images that you are planning to upload
- Documents – depends on the number of documents and the size of the documents that you plan to upload.

2.3.3. Memory

Memory plays an important part in performance of this application.

- Minimum - 512MB
- Recommended – 1GB

The cache settings chosen and the number of simultaneous connections will vary the amount of memory required. The three caching options below utilize the following amount of memory when the application is started by the web server. These numbers are provided as a guide only, the actual amount of memory used in a real production environment will vary for each system:

- No Caching – 28MB
- Language Caching Enabled – 29MB
- Page Caching Enabled – 32MB
- Page & Language Caching Enabled – 33MB

The list of caching options below are calculated on a per connected user basis. These numbers are provided as a guide only, the actual amount of memory used in a real production environment will vary for each user:

- Menu Caching Enabled – 2MB maximum (based on a contact who has access to all pages)
- Role & Token Caching Enabled – 1MB per user (based on a contact who is a member of all the default roles)
- Favorites Caching Enabled – 1MB per user (based on a contact having 15 favorite items)



As a final important point a web server will naturally utilize more or less memory as new connections are made and old ones loss. It will also naturally increase the amount of memory utilized as more pages are accessed. This is a normal operation of the web server and not a function of the caching options.

2.4. Client Requirements

2.4.1. Operating Systems

ER Management Suite is officially supported on the following client based operating systems:

- Windows XP
- Windows Vista
- Windows 2000
- Windows 2003
- Pocket PC 2005 (Microsoft Windows Mobile 5.0 or greater)

2.4.2. Supported Browsers

ER Management Suite is officially supported on the following client browsers:

- Firefox 1.5 or greater
- Internet Explorer 6.0 or greater
- Internet Explorer for Pocket PC (Windows Mobile 5.0 or greater)

Web pages used the following web technologies:

- HTML 4.01
- CSS 2.1
- JavaScript
- Cookies



3. Before You Begin

3.1. Prerequisites

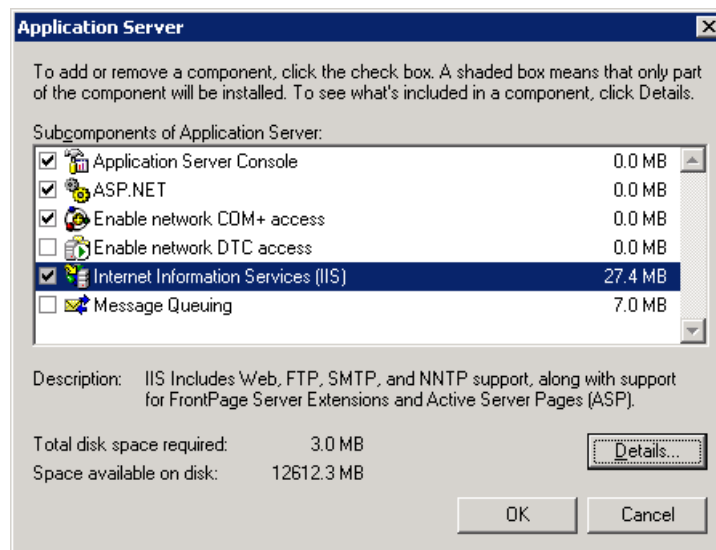
ER Management Suite requires the following additional software to be pre-installed:

- Internet Information Server 6.0
- Microsoft .Net Framework 2.0 (available at <http://www.microsoft.com/downloads/details.aspx?FamilyID=0856EACB-4362-4B0D-8EDD-AAB15C5E04F5&displaylang=en>)
- Microsoft AJAX .Net 2.0 Extensions 1.0 (available at <http://ajax.asp.net>)

3.1.1. Internet Information Server

IIS is a standard Windows 2003 component and can be installed through the Add/Removes Programs control panel as part of the Application Server option. When installing the Application Server option you should ensure that the following components are selected:

- Application Server Console
- ASP.NET
- Enable network COM+ access
- Internet Information Services (IIS)



Under the Internet Information Services (IIS) component you should ensure that the following sub-components are selected:

- Common Files
- Internet Information Services Manager
- World Wide Web Service

Under the World Wide Web Service you should ensure that the following sub-components are selected:

- World Wide Web Services



3.1.2. Microsoft AJAX .Net 2.0 Extensions

The Microsoft AJAX .Net 2.0 Extensions are required for the application suite to function and can be downloaded from <http://ajax.asp.net>.

3.1.3. Microsoft .Net Framework 2.0

The web application has been developed in the Microsoft 2.0 .Net Framework and as such it must be installed for the application to work.

Note: If you install Microsoft .Net Framework 2.0 after installing the application suite you will need to re-install the application.

3.2. Database Preparation

Before you install the application on your web server you must have your database administrator create a blank database. This database will then be populated by the installer with the tables and default data required by the application.

3.2.1. Creating a Blank Database

The installer requires DB Owner rights to successfully create and populate the tables during the installation. You can use either SQL or Windows Integrated Authentication during the installation.

Note: If you are using Windows Integrated Authentication, then you must ensure that the installer is run under a Windows account that has Administrative rights on the Web Server and DB Owner rights to the blank database (that has been created).

3.2.2. Database Security Requirements

By default the ER Management Suite uses Windows Integrated Security to read and write to the database. Below discusses how Windows Integrated security works under different scenarios. These are provided as a guide only and you should consider your security requirements before implementing any of the suggestions in this document.

Web Server and SQL Server are in the same domain – under this scenario it is possible to add the server name as an SQL login. For example (if your web server was called WEB01 in the domain YDOMAIN, then you would add the account as YDOMAIN\WEB01\$ with read and write permissions to the ERMS database.

Web Server and SQL Server are on the same server – under this scenario it is possible to add the local group IIS_WPG as an SQL login. This group will require read and write permissions to the ERMS database.

All other scenarios – under any other scenario you will need to configure a SQL login account on the database server and modify the web.config file post installation. See the section Web.Config File under Advanced Topics for more information on modifying the web.config file.



4. Deploying ER Management Suite

4.1. Installing ER Management Suite

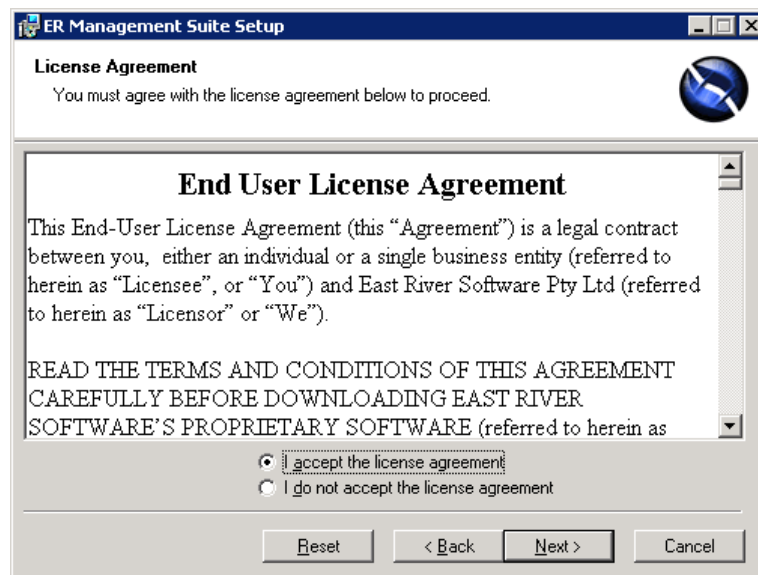
Now that you have completed all the Before You Begin steps you are ready to install ER Management Suite. Begin by running the ERMS.msi file to start the installation process.

4.1.1. Welcome Screen



Click **Next** to start the installation process

4.1.2. License Agreement



Read the licensing agreement. If you accept the terms of the agreement click **Next** to continue.



4.1.3. User Information

User Information
Enter the following information to personalize your installation.

Full Name:

Organization:

The settings for this application can be installed for the current user or for all users that share this computer. You must have administrator rights to install the settings for all users. Install this application for:

< Back Next > Cancel

Enter your **Full Name** and the name of your **Organization** in the fields provided. Click **Next** to continue.

4.1.4. Document Destination Folder

Document Destination Folder
Select a folder where the application will be installed.

The ER Management Suite will store files that are upload in subfolders under this directory.

Note: That subfolders are created for each module. These locations can be changed later through the settings page for each module.

To install into a different folder, click the Browse button, and select another folder.

You can choose not to install ER Management Suite by clicking Cancel to exit the Wise Installation Wizard.

Destination Folder
C:\Program Files\East River Software\ERMS\ Browse

< Back Next > Cancel

Enter the location that uploaded files will be stored it and click **Next** to continue.

More Information

A sub folder will then be created for the following names for the object types:

Sub Folder Name	Object Type	Comment
Client	Contact or Department	Files that are attached to a contact or department will be stored in a subfolder based on the security identifier or the full name of the



Sub Folder Name	Object Type	Comment
		contact/department.
DocTemp	Site	A location that temporary files are stored
Incident\Tickets	Ticket	Files that are attached to a ticket will be stored in a subfolder based on the ticket id.
Projects	Project	Files that are attached to a project will be stored in a subfolder based on the project id.

You can change any of these locations through the Settings page for each module once the installation has been completed. When changing the location it is important that you do not choose a folder that is accessible via a URL path.

4.1.5. ERMS Site Information

ERMS Site Information

The following information is used by ER Management Suite.

Domain Product Key:

User Product Key:

Web Site Url:

< Back Next > Cancel

Enter the **Domain Product Key** and **User Product Key** that you received. Enter the **Web Site Url** that you submitted when purchasing the product. The product keys are tied to the web site URL and therefore you must enter the correct information, otherwise the application will not work.

The Domain and User product must be entered correctly otherwise you will not be able to log into the web site.

Click **Next** to continue.



4.1.6. ERMS Authentication and AD Integration

ERMS Authentication and AD Integration

The following information is used by ER Management Suite.

Authentication Method:

ERMS Database Authentication
 Active Directory Authentication

Active Directory Integration:

LDAP Domain: (Example: domain.int)

User OU: (Example: ou=new york,ou=east coast)
Leave blank if you want to query whole domain

< Back Next > Cancel

Select the **Authentication Method** that you wish to use. If you are planning to authenticate against or import users from Active Directory, then enter the **LDAP Domain** name of your AD domain and the **User OU** (if any) that you wish to query for a list of AD users when importing. Click **Next** to continue.

More Information - Authentication Method

Select the **Authentication Method** that you wish to use. If you select **ERMS Database Authentication** then you will initially log on with the following credentials:

- User name: *ermsadmin*
- Password: *erpassword*

If you select **Active Directory Authentication** then you will initially log on with the following credentials:

- User name: *ermsadmin*
- Password: The AD password associated with the *ermsadmin* account

The ERMS database is initially populated with only one account called *ermsadmin*. Therefore you must ensure that such an account exists and that you know the password before selecting this option. You can change the authentication method at a later stage through the Settings page in the Site module.

More Information - Active Directory Integration

The **LDAP Domain** field represents the domain that will be used for Active Directory authentication. You only need to set this value if you are planning to use Active Directory Authentication OR import users from Active Directory.

The **User OU** is used by the import page for importing users from Active Directory into the ERMS application. It allows you to define which part of the AD domain tree should be query for a list of users. For example; if your domain is called internal.int and you wanted to display all users in domain;



then you should leave this field blank. But if you only want to display users in an Organization Unit (OU) called Internal Users you would enter: `ou=internal users`.

4.1.7. SQL Server Connection

SQL Server Connection
Select the SQL server and security credentials to be used for SQL script execution during installation.

SQL Server Name: Browse

Database Name:

Database Authentication:

Windows NT Authentication
 SQL Authentication

SQL User Name:
SQL Password:

< Back Next > Cancel

In the **SQL Server Name** field enter the name of the SQL server that has the blank ERMS database. In the **Database Name** field enter the name of the blank ERMS database. Select the **Database Authentication** method and click **Next** to continue.

More Information - Database Authentication

The selected method and the credentials entered are only used during the installation process. The credentials that you use must have DB Owner rights to the blank ERMS database.

4.1.8. Choose ERMS Web Site Location

Choose ERMS Web Site Location
Specify the location for the ERMS Web site.

New Web Site
 Existing Web Site
 Virtual Directory

< Back Next > Cancel

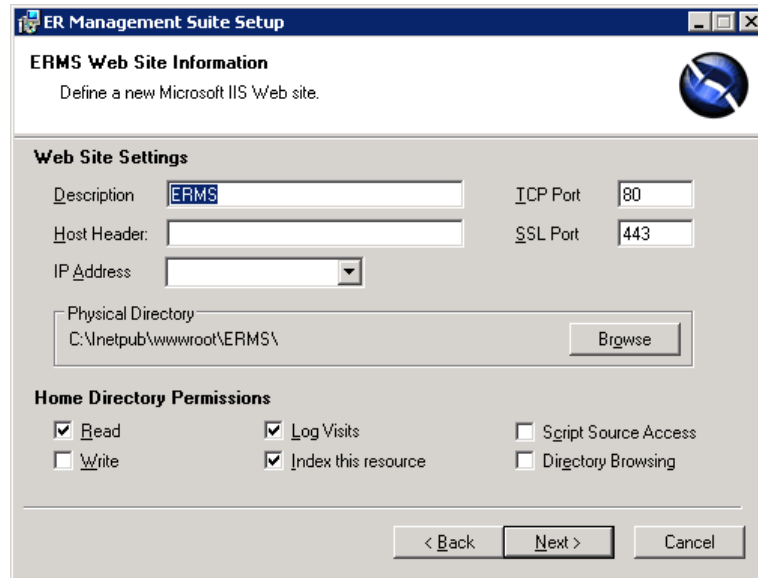
Select the location for the ERMS Web Site

- New Web Site – Installs ERMS into the root of a new website that will be created



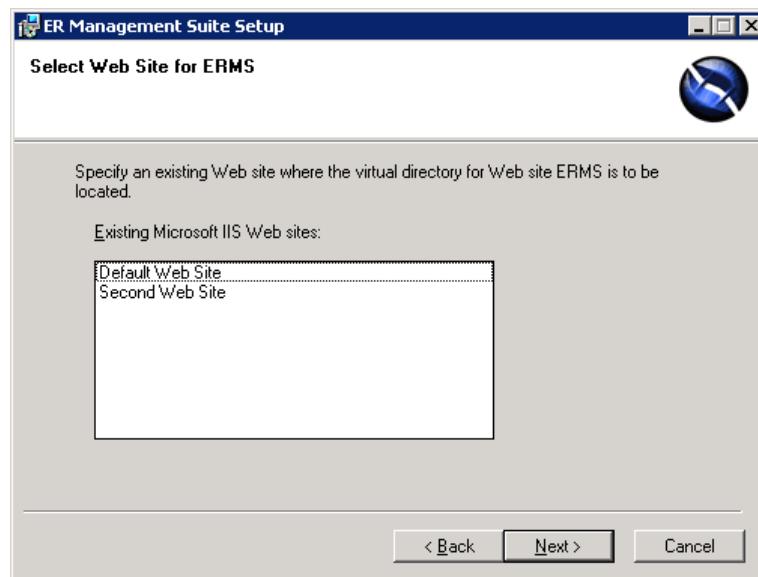
- Existing Web Site – Installs ERMS into the root of an existing web site
- Virtual Directory – Installs ERMS under a virtual directory for an existing web site. If you have multiple web site you will be able to choose which web site to create the virtual directory under

4.1.9. New Web Site



Select the **IP Address** that you want to assign to this web site. If you are not using SSL, then delete the **SSL Port** number, otherwise set the SSL port. The name of the web site will be set to the **Description** given. You should refer to the IIS documentation for more information on each of these fields. Click **Next** to continue.

4.1.10. Existing Web Site

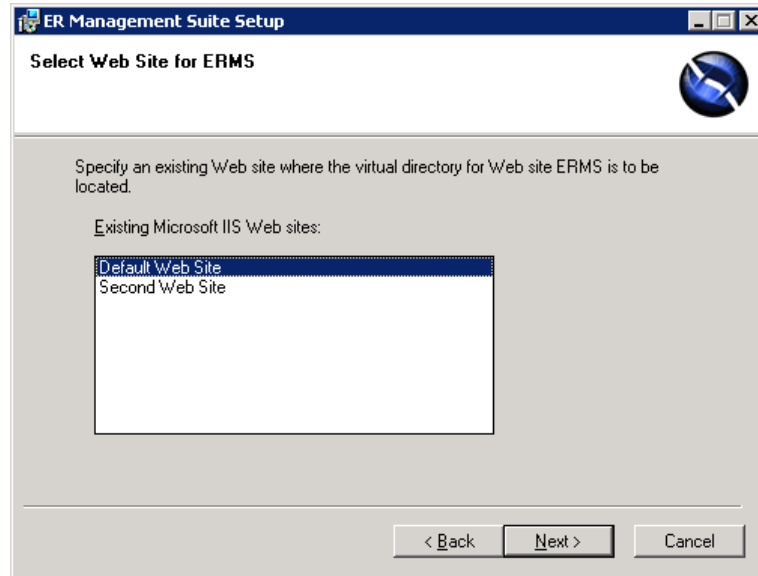


Select the existing web site that you want ERMS to be installed on. **Note:** Because the web site already exists you must ensure that the web site is set to use ASP.NET version 2.0 and that *default.aspx* is in the list of default documents. *Default.aspx* should also be at the top of the list.

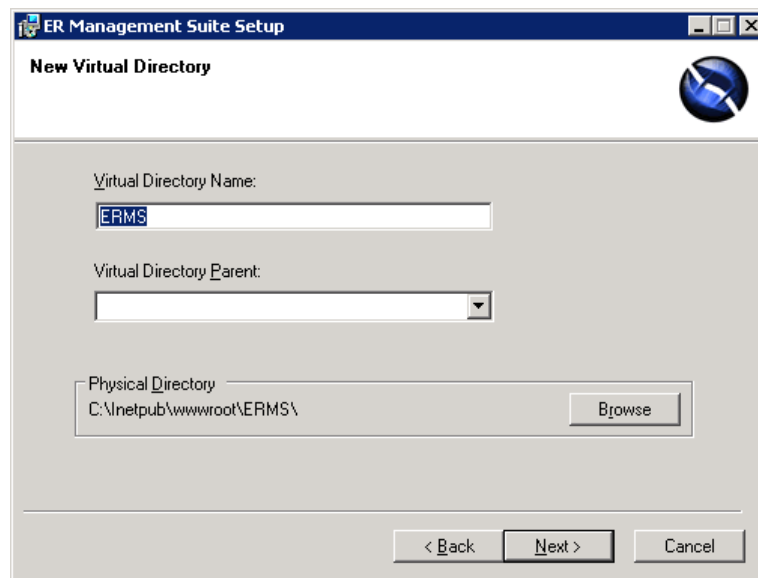


To change these settings use the Administrative Tool called **Internet Information Services Manager**. Once you have located your web site; right mouse click and from the context menu select **properties**. Click on the **Documents** tab, and then click on the **Add** button. In the **Default Content Page** enter *default.aspx* and click the **OK** button. Click on the ASP.NET tab, and then set the **ASP.NET version** to 2.0. Click **OK** to close the window.

4.1.11. Virtual Directory



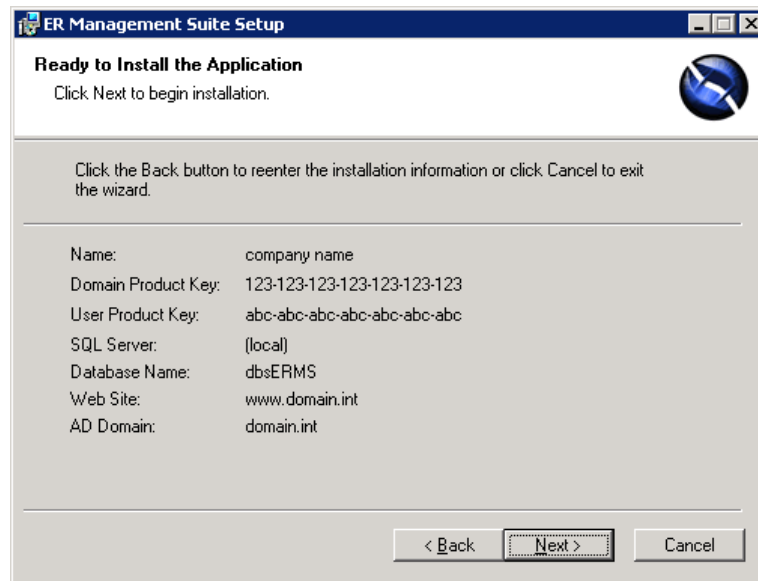
Select the existing web site that you want the virtual directory to be created in. **Note:** This dialog will not appear if you only have one web site.



In the **Virtual Directory Name** field enter the name for the virtual directory. If you want to create the virtual directory under another existing virtual directory, then set the **Virtual Directory Parent**.



4.1.12. Ready to Install



After you have reviewed the information you may begin the installation by clicking on the **Next** button.

4.1.13. Installation Completed



Your installation has completed successfully, click **Finish** to close the window



5. Advanced Topics

5.1. Web.Config File

The web.config file contains a number of advanced settings that for most part will never have to be changed. However number some circumstances you may have to change some of the configuration information because you have moved your database, change Active Directory domains or want to set the default regional settings for the application.

To change the web.config file you must open the file using notepad. The file should be located in the root of the virtual directory or if you have installed ERMS in the root of your web site then it will be located there.

NOTE: Any changes made to the web.config file will reset all web sessions. This is the normal behavior of IIS and not the application.

5.1.1. Database Connection String

In some circumstances you may need to change the database details. This may be the name of the SQL server, the name of the database or the details/method used to connect to the database.

Open the web.config file, and locate the **gv_DBString** key. The value of this key contains the string used to connect to the ERMS database. The string has the following parts with each part separated by a semi-colon.

- Provider – Determines which provider is used in making the connection. Do not change this value.
- Data Source – This is the name of your SQL server.
- Initial Catalog – This is the name of the ERMS database
- Integrated Security – The integrated security method used. This value should not be changed if you are using integrated security.

Using SQL Account and Password Instead of Integrated Security

If you wanted to specify and SQL account and password you would replace *Integrated Security=SSPI* with the following two parts:

- User ID – Is the name of your SQL account.
- Password – This is the name of the ERMS database

Put the string together it should then look similar to this:

Provider=SQLOLEDB.1;Data Source=servername;Initial Catalog=databasename;User ID=username;Password=userpassword
where:

- *servername* – is the name of your SQL server
- *databasename* – is the name of your ERMS database
- *username* – Is the name of your SQL account.
- *userpassword* – is the password for that account



5.1.2. Active Directory Integration

Change AD Domains

As mentioned previously ER Management Suite integrates with Active Directory for:

- Authentication
- Importing AD users into ERMS

In order to achieve this ERMS requires the name of your domain, if your AD domain changes name then you will need to modify the value in the **gv_DOMAIN** key. The name of your Active Directory domain must be specified using the DNS name and not the NetBios name.

Changing the User OU Location

If you wish to change the OU that the import page queries for AD users then you will need to modify the value for the **gv_LDAPUsers** key. This value in this represents the container or organization unit that you want the import page to query. If you want the import page to query all users with in your domain then you should leave this field blank.

5.1.3. Web Site URL and Virtual Directory

Web Site URL

If you want to change the name of your web site you will need to request replacement product license keys (domain and user). Once you have the new keys, the following procedure must be followed:

- Update your license keys through the **Site > Administration > Options > Licensing** page. Once you have done this your web site will be broken.
- In the web.config file locate the key **gv_Root** and change the value to the new web site URL.
- On the SQL server and for you ERMS database you must run the following SQL statement: *DELETE FROM tblClientUserMenus* This statement is required to be run to ensure that all contacts rebuild there cached menus with the new web site location.
- Update your DNS servers to the new name (if required)

Your web site should now be functioning as normal again.

Virtual Directory

If you want to change the name of your virtual directory; then the following procedure must be followed:

- In the web.config file locate the key **gv_Virtual** and change the value to the new virtual directory name.
- On the SQL server and for you ERMS database you must run the following SQL statement: *DELETE FROM tblClientUserMenus* This statement is required to be run to ensure that all contacts rebuild there cached menus with the new web site location.

Your web site should now be functioning as normal again.



5.1.4. Locale and Regional Settings

By default the ER Management Suite will attempt to detect the user browser settings and duplicate those with the application. This will affect items such as language used for the logon page and date/time formats.

If the application is unable to determine the browser settings then it will default to US. If you wish to change the default language then you will need to modify the **globalization** key. This key has the following parts:

- **enableClientBasedCulture** – Determines if the culture and **uiCulture** values should be based on the browser settings.
- **culture** – The culture to be used. If set to **auto:en-us** then the application will attempt to detect the client browser settings first. If detection fails then the **en-US** (english:US) culture will be used by default.
- **uiCulture** – The user interface culture to be used. If set to **auto:en** then the application will attempt to detect the client browser settings first. If detection fails then the **en** (english) culture will be used by default.

All other parts of this key should not be changed.

Setting the Culture Value

If you want to set ERMS to a specific culture, then you will have to set **enableClientBasedCulture** to false and then set the **culture** to the culture that you want (see Appendix A for a list of different cultures). For example: if you want the United Kingdom as the specific culture you would set:
enableClientBasedCulture="False" Culture="en-GB"

If you only want to change the default culture then you will need to change the culture part only. For example: if you want the United Kingdom as the default culture you would set:

enableClientBasedCulture="True" Culture="auto:en-GB"

Currently only the following two cultures are supported for language:

- en-GB English (United Kingdom)
- en-US English (United States)

If you set the culture value outside of these two cultures; then only the date/time formats will be changed. The logon page will also default to using the en-US language and the users. Once logged on the contacts language is determined by their language setting. This is part of their profile preferences.



6. Troubleshooting

6.1. Web Site Configuration Issues

6.1.1. Configuration Error: Unrecognized attribute 'xmlns'

This is an indication that the web site or virtual directory has been configured to use ASP.Net 1.1 instead of ASP.Net 2.0. This can be changed using the following procedure:

- Under Administrative Tools start the the **Internet Information Services (IIS) Manager** administrative tool.
- Navigate to the web site or virtual directory
- Right mouse click the web site or virtual directory and from the context menu select **Properties**
- Click on the **ASP.NET** tab
- Change the **ASP.Net version 2.0.x**
- Click OK
- Close the IIS Manager and test the web site again

6.2. Database Connection Issues

6.2.1. Cannot open database requested in login '*DatabaseName*'. Login fails.

Where *DatabaseName* is the name of your database.

This error message indicates that the one of the following is incorrect.

- The name of the database
- The credentials used to log into the database
- The right that the credentials have to the database

Ensure that the following are correct in the web.config file. See **Advanced Topics** for more information on the database connection string.

- The name of the database is correct
- That the account used to log on has been granted rights to the database
- That the accounts used to log on as db_datareader and db_datawriter rights to the database.

6.2.2. [DBNETLIB][ConnectionOpen (Connect()).]SQL Server does not exist or access denied.

This error message indicates that the one of the following is incorrect.

- The name of the SQL server
- The credentials used to log into the database

Ensure that the following are correct in the web.config file. See **Advanced Topics** for more information on the database connection string.

- The name of the SQL server is correct
- That the account used to log on has been granted rights to the database



6.2.3. Login failed for user '*Username*'

Where *Username* is the name of the account that you are trying to connect to the database with.

This error message indicates that the one of the following is incorrect.

- The credentials used to log into the database
- The right that the credentials have to the database

Ensure that the following are correct in the web.config file. See **Advanced Topics** for more information on the database connection string.

- That the account used to log on has been granted rights to the database
- That the accounts used to log on as db_datareader and db_datawriter rights to the database.

6.3. Active Directory Connection Issues

6.3.1. Unable to log on

If this is the first time that you are logging on then you can only logon with an account called “ermsadmin”. If not such account exists in your domain then you will not be able to log on until one is created in your AD domain.

Also ensure that the following keys are correct in the web.config file. See **Advanced Topics** for more information on the AD connection strings.

- Check the value of the **gv_DOMAIN** key. This key should have the DNS name of your domain.

6.3.2. Problems with importing users from AD

Also ensure that the following keys are correct in the web.config file. See **Advanced Topics** for more information on the AD connection strings.

- Check the value of the **gv_DOMAIN** key. This key should have the DNS name of your domain.
- Check the value of the **gv_LDAPUsers** key. This key should have the OU that you wish query for a list of users or if you want to query the whole domain it should blank (e.g. value="").

6.4. Page and User Membership Changes

6.4.1. Changes Not visible

Ensure that you have reloaded the cache after you have made your changes. This can be done through the **Site > Administration > Options > Reload Cache** page.

Depending on the changes you have made you may have to also force a rebuild of contact menus. This can be done through the **Site > Tab/Menu > Rebuild Menu** page.



7. Appendix A

7.1. Cultures

Culture/Language Name	Culture Code
af	Afrikaans
af-ZA	Afrikaans (South Africa)
sq	Albanian
sq-AL	Albanian (Albania)
ar	Arabic
ar-DZ	Arabic (Algeria)
ar-BH	Arabic (Bahrain)
ar-EG	Arabic (Egypt)
ar-IQ	Arabic (Iraq)
ar-JO	Arabic (Jordan)
ar-KW	Arabic (Kuwait)
ar-LB	Arabic (Lebanon)
ar-LY	Arabic (Libya)
ar-MA	Arabic (Morocco)
ar-OM	Arabic (Oman)
ar-QA	Arabic (Qatar)
ar-SA	Arabic (Saudi Arabia)
ar-SY	Arabic (Syria)
ar-TN	Arabic (Tunisia)
ar-AE	Arabic (U.A.E.)
ar-YE	Arabic (Yemen)
hy	Armenian
hy-AM	Armenian (Armenia)
az	Azeri
az-Cyrl-AZ	Azeri (Azerbaijan, Cyrillic)
az-Latn-AZ	Azeri (Azerbaijan, Latin)
eu	Basque
eu-ES	Basque (Basque)
be	Belarusian
be-BY	Belarusian (Belarus)
bg	Bulgarian
bg-BG	Bulgarian (Bulgaria)
ca	Catalan
ca-ES	Catalan (Catalan)
zh-HK	Chinese (Hong Kong SAR, PRC)
zh-MO	Chinese (Macao SAR)



Culture/Language Name	Culture Code
zh-CN	Chinese (PRC)
zh-Hans	Chinese (Simplified)
zh-SG	Chinese (Singapore)
zh-TW	Chinese (Taiwan)
zh-Hant	Chinese (Traditional)
hr	Croatian
hr-HR	Croatian (Croatia)
cs	Czech
cs-CZ	Czech (Czech Republic)
da	Danish
da-DK	Danish (Denmark)
dv	Divehi
dv-MV	Divehi (Maldives)
nl	Dutch
nl-BE	Dutch (Belgium)
nl-NL	Dutch (Netherlands)
en	English
en-AU	English (Australia)
en-BZ	English (Belize)
en-CA	English (Canada)
en-029	English (Caribbean)
en-IE	English (Ireland)
en-JM	English (Jamaica)
en-NZ	English (New Zealand)
en-PH	English (Philippines)
en-ZA	English (South Africa)
en-TT	English (Trinidad and Tobago)
en-GB	English (United Kingdom)
en-US	English (United States)
en-ZW	English (Zimbabwe)
et	Estonian
et-EE	Estonian (Estonia)
fo	Faroese
fo-FO	Faroese (Faroe Islands)
fa	Farsi
fa-IR	Farsi (Iran)
fi	Finnish
fi-FI	Finnish (Finland)
fr	French
fr-BE	French (Belgium)



Culture/Language Name	Culture Code
fr-CA	French (Canada)
fr-FR	French (France)
fr-LU	French (Luxembourg)
fr-MC	French (Monaco)
fr-CH	French (Switzerland)
gl	Galician
gl-ES	Galician (Spain)
ka	Georgian
ka-GE	Georgian (Georgia)
de	German
de-AT	German (Austria)
de-DE	German (Germany)
de-LI	German (Liechtenstein)
de-LU	German (Luxembourg)
de-CH	German (Switzerland)
el	Greek
el-GR	Greek (Greece)
gu	Gujarati
gu-IN	Gujarati (India)
he	Hebrew
he-IL	Hebrew (Israel)
hi	Hindi
hi-IN	Hindi (India)
hu	Hungarian
hu-HU	Hungarian (Hungary)
is	Icelandic
is-IS	Icelandic (Iceland)
id	Indonesian
id-ID	Indonesian (Indonesia)
it	Italian
it-IT	Italian (Italy)
it-CH	Italian (Switzerland)
ja	Japanese
ja-JP	Japanese (Japan)
kn	Kannada
kn-IN	Kannada (India)
kk	Kazakh
kk-KZ	Kazakh (Kazakhstan)
kok	Konkani
kok-IN	Konkani (India)



Culture/Language Name	Culture Code
ko	Korean
ko-KR	Korean (Korea)
ky	Kyrgyz
ky-KG	Kyrgyz (Kyrgyzstan)
lv	Latvian
lv-LV	Latvian (Latvia)
lt	Lithuanian
lt-LT	Lithuanian (Lithuania)
mk	Macedonian
mk-MK	Macedonian (Macedonia, FYROM)
ms	Malay
ms-BN	Malay (Brunei Darussalam)
ms-MY	Malay (Malaysia)
mr	Marathi
mr-IN	Marathi (India)
mn	Mongolian
mn-MN	Mongolian (Mongolia)
no	Norwegian
nb-NO	Norwegian (Bokmål, Norway)
nn-NO	Norwegian (Nynorsk, Norway)
pl	Polish
pl-PL	Polish (Poland)
pt	Portuguese
pt-BR	Portuguese (Brazil)
pt-PT	Portuguese (Portugal)
pa	Punjabi
pa-IN	Punjabi (India)
ro	Romanian
ro-RO	Romanian (Romania)
ru	Russian
ru-RU	Russian (Russia)
sa	Sanskrit
sa-IN	Sanskrit (India)
sr-Cyrl-CS	Serbian (Serbia, Cyrillic)
sr-Latn-CS	Serbian (Serbia, Latin)
sk	Slovak
sk-SK	Slovak (Slovakia)
sl	Slovenian
sl-SI	Slovenian (Slovenia)
es	Spanish



Culture/Language Name	Culture Code
es-AR	Spanish (Argentina)
es-BO	Spanish (Bolivia)
es-CL	Spanish (Chile)
es-CO	Spanish (Colombia)
es-CR	Spanish (Costa Rica)
es-DO	Spanish (Dominican Republic)
es-EC	Spanish (Ecuador)
es-SV	Spanish (El Salvador)
es-GT	Spanish (Guatemala)
es-HN	Spanish (Honduras)
es-MX	Spanish (Mexico)
es-NI	Spanish (Nicaragua)
es-PA	Spanish (Panama)
es-PY	Spanish (Paraguay)
es-PE	Spanish (Peru)
es-PR	Spanish (Puerto Rico)
es-ES	Spanish (Spain)
es-UY	Spanish (Uruguay)
es-VE	Spanish (Venezuela)
sw	Swahili
sw-KE	Swahili (Kenya)
sv	Swedish
sv-FI	Swedish (Finland)
sv-SE	Swedish (Sweden)
syr	Syriac
syr-SY	Syriac (Syria)
ta	Tamil
ta-IN	Tamil (India)
tt	Tatar
tt-RU	Tatar (Russia)
te	Telugu
te-IN	Telugu (India)
th	Thai
th-TH	Thai (Thailand)
tr	Turkish
tr-TR	Turkish (Turkey)
uk	Ukrainian
uk-UA	Ukrainian (Ukraine)
ur	Urdu
ur-PK	Urdu (Pakistan)



Culture/Language Name	Culture Code
uz	Uzbek
uz-Cyrl-UZ	Uzbek (Uzbekistan, Cyrillic)
uz-Latn-UZ	Uzbek (Uzbekistan, Latin)
vi	Vietnamese
vi-VN	Vietnamese (Vietnam)