

# OpenEnterprise™ Version 3.1 Installation Guide



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## Revision Tracking Sheet

### September 2014

This manual may be revised periodically to incorporate new or updated information. The revision date of each page appears at the bottom of the page opposite the page number. A change in revision date to any page also changes the date of the manual that appears on the front cover. Listed below is the revision date of each page (if applicable):

Page	Revision
All pages	September 2014
Initial issue	July-2014

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#### Note

This manual details the installation and licensing processes for Version 3.1 and Service Pack 1 of OpenEnterprise. If you need installation information for Version 2.83 of OpenEnterprise, refer to the *OpenEnterprise Installation Reference Guide (V2.83)*, part number D301494X412. For licensing information for Version 2.83, refer to the *OpenEnterprise Licensing User Manual*, part number D301711X012.

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# Overview

This guide details the processes required to install OpenEnterprise (OE) in any of its three primary configurations: *OE Server*, *OE Server/ Workstation*, and *OE Workstation*. Each configuration has its own section. OE also has five optional programs which you can install on separate dedicated computers: *Remote Comm Manager*, *Standalone OPC Server*, *Standalone Reporting*, *Standalone Messaging*, and *Standalone ODBC*. Each of these programs also has its own section.

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## Note

This guide assumes you have experience installing either prior versions of OE or similarly complex software systems. If you do not, contact your Emerson Process Management LBP or the Remote Automation Solutions Systems Group for assistance.

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Essential to a successful OE installation is a clear understanding of the scale, size, and intent of your intended application, as well as the roles the various computers play in that application.

## 1. Minimum hardware and operating system requirements

Following are the recommended hardware and operating system requirements for each component of an OE installation.

### OE Workstation

System Component	Specifications
CPU	Dual-core (3.1 GHz, 3MB cache) or better
Memory	4 GB or better
Video Requirements	DirectX9 compatible (minimum Windows 7 requirement)
HDD Size	80 GB
I/O Slots	USB for GraphWorX license dongle
Preferred/Suggested Hardware Manufacturer	Dell
Operating System	See <a href="#">Section 4, Installation options</a>

### OE Server (Simplex license)

An OE Simplex license supports systems with up to 10 RTUs.

System Component	Specifications
CPU	Intel Xeon 4C/4T 3.1 GHz, 8 MB cache or better
Memory	8 GB or better
Video Requirements	SVGA or better (If Server/Workstation DirectX9 compatible)

System Component	Specifications
HDD Size	120 GB (see <i>Server disk size note</i> )
I/O Slots	Specific to deployment
RAID Controller	RAID 5 (see <i>Server disk size note</i> )
Communications (Ethernet)	2 NICs (LAN + redundancy)
Communications (Serial)	Specific to deployment
Preferred/Suggested Hardware Manufacturer	Dell
Operating System	See <a href="#">Section 4, Installation options</a>

### OE Server (Pro license)

An OE Pro license supports systems with up to 100 RTUs.

System Component	Specifications
CPU	Intel Xeon 4C/8T 3.4 GHz, 8 MB cache or better
Memory	16 GB or better
Video Requirements	SVGA or better (If Server/Workstation DirectX9 compatible)
HDD Size	120 GB(see <i>Server disk size note</i> )
I/O Slots	Specific to deployment
RAID Controller	RAID 5 (see <i>Server disk size note</i> )
Communications (Ethernet)	2 NICs (LAN + redundancy)
Communications (Serial)	Specific to deployment
Preferred/Suggested Hardware Manufacturer	Dell
Operating System	See <a href="#">Section 4, Installation options</a>

### OE Server (Max license)

An OE Max license supports systems with more than 100 RTUs.

System Component	Specifications
CPU	Intel Xeon 4C/8T 3.5 GHz, 8 MB cache or better
Memory	24 GB or better
Video Requirements	SVGA or better (If Server/Workstation DirectX9 compatible)
HDD Size	120 GB (see <i>Server disk size note</i> )
I/O Slots	Specific to deployment
RAID Controller	RAID 5 (see <i>Server disk size note</i> )
Communications (Ethernet)	2 NICs (LAN + redundancy)
Communications (Serial)	Specific to deployment
Preferred/Suggested Hardware Manufacturer	Dell
Operating System	See <a href="#">Section 4, Installation options</a>

## Remote Comm Manager, Standalone OPC Server, Standalone Reporting, Standalone Messaging, Standalone ODBC

System Component	Specifications
CPU	Dual-core 3.1 GHz, 3 MB cache or better
Memory	4 GB or better
Video Requirements	If Windows Server SVGA or better If Windows 7 DirectX9 compatible
HDD Size	80 GB or better
Preferred/Suggested Hardware Manufacturer	Dell
Operating System	See <a href="#">Section 4, Installation options</a>

## Workstation Terminal Server

System Component	Specifications
CPU	Intel Xeon 4C/8T 3.5 GHz, 8 MB cache or better
Memory	16 GB or better
Video Resolution	SVGA or better
Video RAM	32 MB or better
HDD Size	120 GB or better
I/O Slots	USB for GraphWorX license dongle
RAID Controller	Not applicable
Communications (Ethernet)	2 NICs (LAN + redundancy)
Communications (Serial)	Not applicable
Preferred/Suggested Hardware Manufacturer	Dell
Operating System	See <a href="#">Section 4, Installation options</a>

### Server disk size

Microsoft's recommended hard drive size for Windows Server is 120 GB. In addition to the operating system and installed software, an additional 8 GB plus 25 bytes for each historical sample will be required. All server hard drives should be RAID 5 (which requires a minimum of 3 drives) or similar fault-tolerant architecture.

For example, assume 1000 signals stored for 1 year on a local hard drive with logging occurring every minute:  $1000 \times 25 \times 1440 \times 365 = 13,140,000,000$  bytes (12.24 GB) plus 8 GB overhead = 20.24 GB. For larger servers, contact your OE sales representative.

## 2. Installation wizard

To simplify the installation process, OpenEnterprise makes extensive use of software wizards, which guide you through each step of the installation. Once you insert the installation DVD and select the OE product from the splash screen, wizards step you through the process, ensuring the correct sequence and software selections.

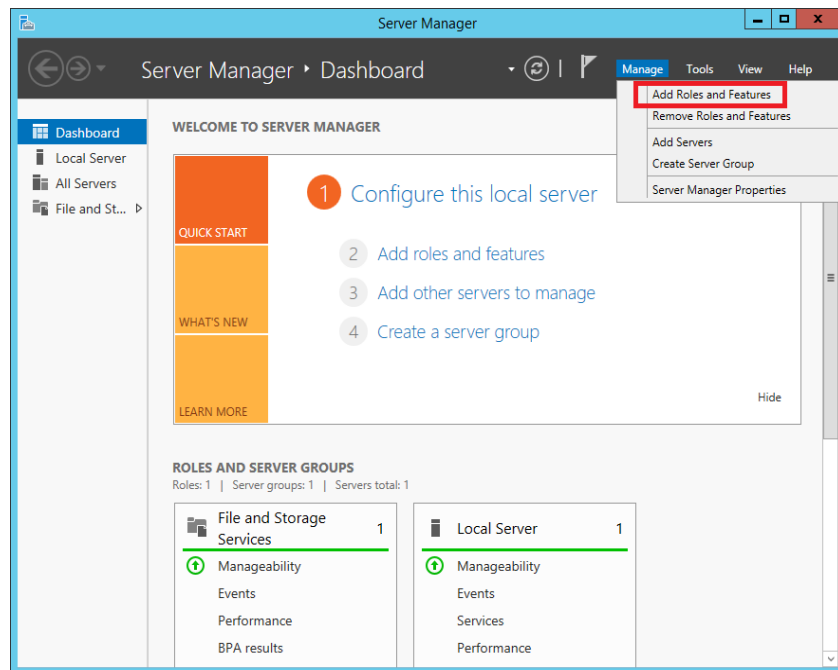
### 3. Requisite software

As part of the installation wizard, OE audits your existing system at various points to determine whether critical pieces of Microsoft software are already installed. If it cannot find certain software packages such as Visual Studio Tools for Office (VSTO), Visual C++ redistributable files, or Microsoft Core XML Services, the wizard may prompt you to install these programs. The OE installation DVD contains all requisite programs.

#### Installing Microsoft .NET Framework 3.5 SP1

If you intend to install OE Workstation or OE Server/Workstation, you **must** pre-install Microsoft® .NET Framework 3.5 SP1. To install this software on Windows Server 2012 and Windows Server 2012 R2:

1. As shown in *Figure 1*, in the Server Manager Tool of Windows Server 2012 (R2), select **Add Roles and Features** item in the **Manage** menu (see *Figure 1*).



*Figure 1. Add Roles and Features item in the Manage menu*

2. If you have specified preliminary operations, the Before you begin section of the Add Roles and Feature wizard displays (as shown in *Figure 2*):

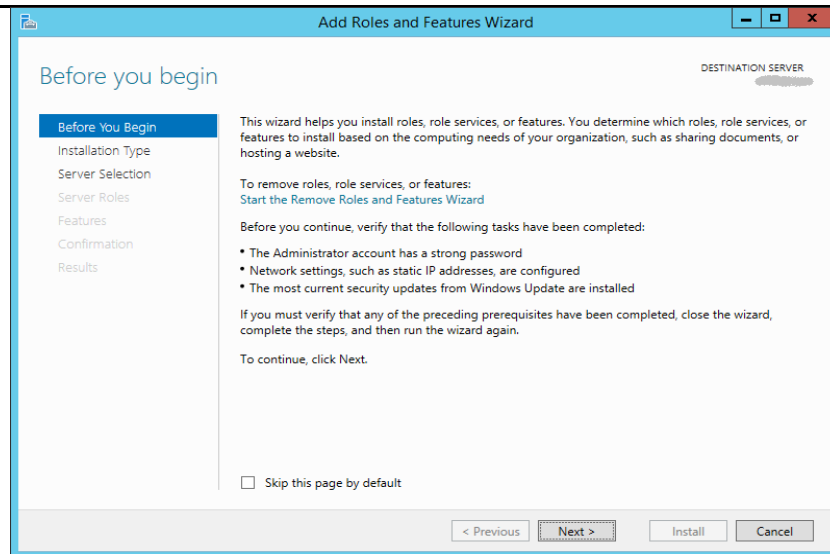


Figure 2. Before you begin section of the Add Roles and Features wizard

3. Click **Next**. The wizard displays the Installation Type section (shown in Figure 3). Select the Role-based or feature-based installation option. Use it to configure this server by adding roles, role services, and features.

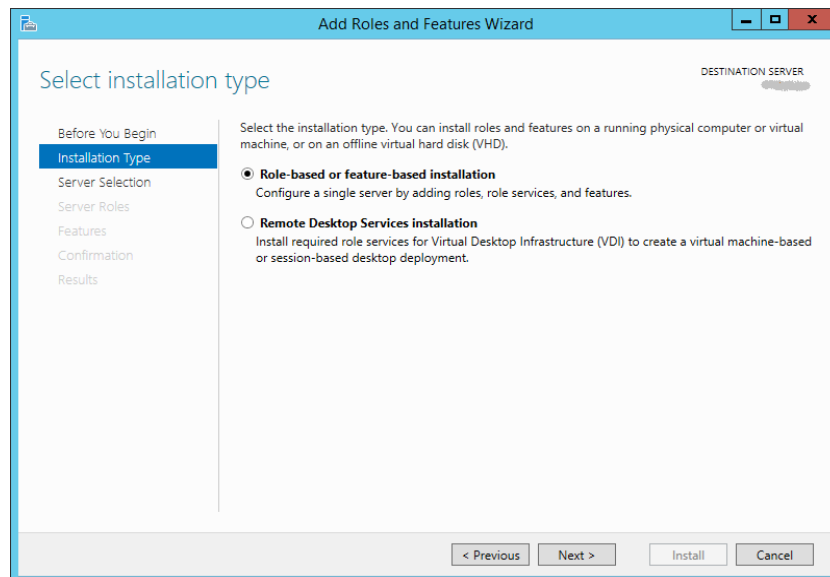


Figure 3. Installation Type section of Add Roles and Features wizard

4. Click **Next**. The wizard displays the Server Selection section (shown in Figure 4). Click **Select a server from the server pool** and then select a server from the servers shown in the Server Pool.

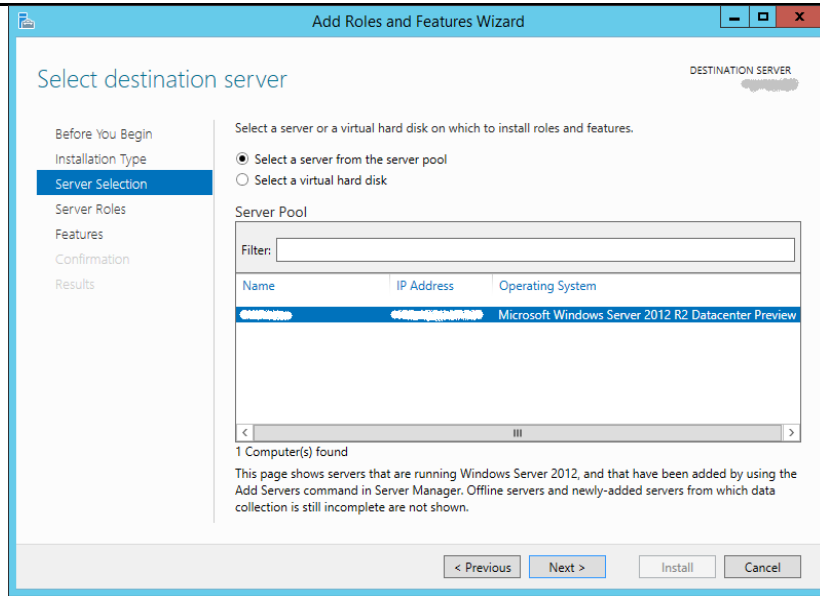


Figure 4. Server Selection section of the Add Roles and Features wizard

5. Click **Next**. The wizard displays the Server Roles section (shown in Figure 5).

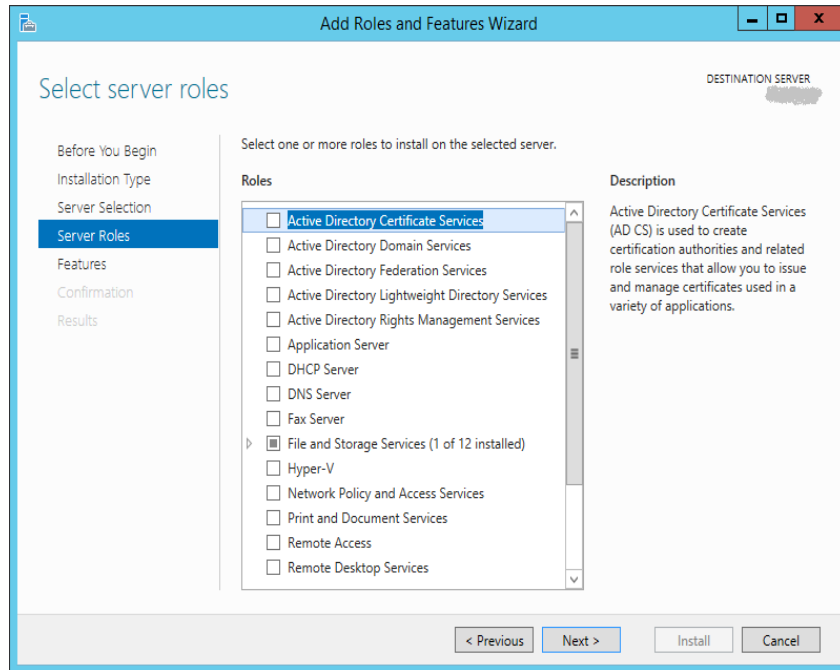


Figure 5. Server Roles section of Add Roles and Feature wizard

6. Select options as shown in Figure 6.



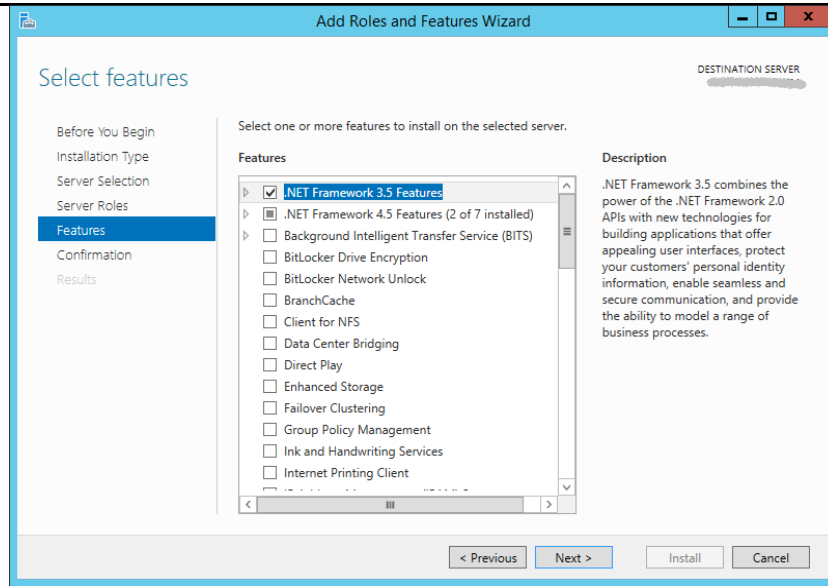


Figure 6 - Features section of the Add Roles and Feature wizard

7. Click **Next**. The wizard displays the Confirmation section (shown in Figure 7).

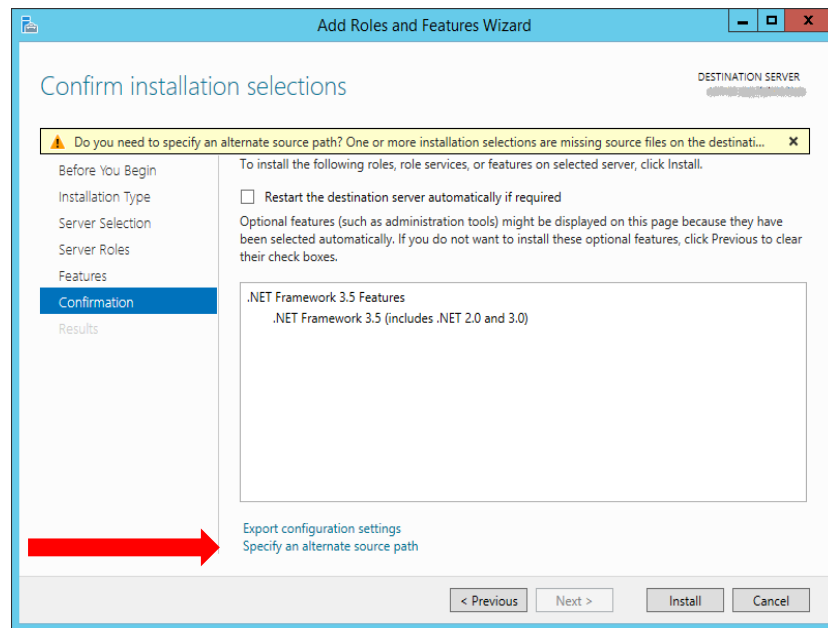


Figure 7 - Confirmation section of the Add Roles and Features wizard

8. The top of the window shown in Figure 7 displays a warning message, instructing you that one or more installation selections are missing source files on the destination server and prompting you to identify an alternative source path. Click the **Specify an alternate source path** link (at the bottom of the screen). The wizard displays Figure 8.

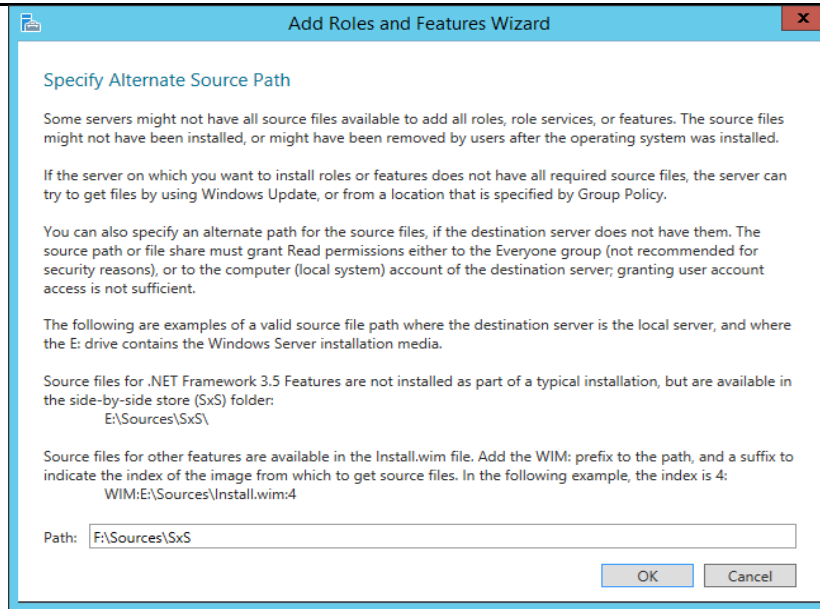


Figure 8 - Specify an alternative source path for NetFx3 source files

9. The required source files for the .Net Framework 3.5 are located either on the Windows Server 2012 (R2) DVD or on the OpenEnterprise Version3.1 installation DVD. In this example, the DVD device is identified as drive F, so the alternative path is **F:\Sources\SxS**. Click **OK**. The wizard redisplay *Figure 7*.
10. Click **Install** to start the installation process. At the end of a successful install, the **Results** section shows the installation status displaying the message **Installation succeeded** (as show in *Figure 9*).

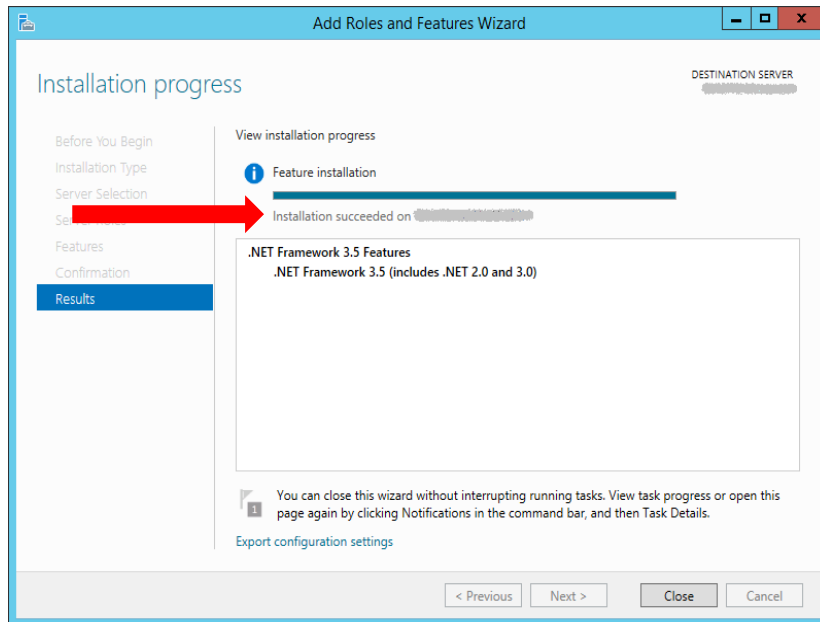


Figure 9 - Result section of Add Roles and Feature wizard

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## 4. Installation options

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### Note

Before you begin installing any OE component, we recommend that you close **all** other applications. By default, on completion the installation process reboots your system. To prevent loss of critical data, close **all** applications before you begin an installation. Additionally, disable Sleep Mode on the host computer for **any** of the following install options.

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Depending on the requirements of your site, you can install OpenEnterprise in three major configurations:

- OpenEnterprise Server
- OpenEnterprise Server/Workstation
- OpenEnterprise Workstation

You can also install the following optional programs, each on their own dedicated computers:

- Remote Comm Manager
  - Standalone OPC Server
  - Standalone Reporting
  - Standalone Messaging
  - Standalone ODBC
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### Note

You can install **only one** of these optional programs on any computer. For example, you cannot install both Standalone Messaging and Standalone Reporting on the same computer.

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## Installation configurations and OS compatibility

Each OE installation configuration supports specific 32-bit/64-bit operating systems:

- OE Server
  - Windows 7 SP1 (64-bit)
  - Windows Server 2008 R2 SP1
  - Windows Server 2012 R2
  - For hardware specs, see tables earlier in this section based on server (Simplex, Pro, or Max)
- OE Workstation
  - Windows 7 SP1 (64-bit)
  - Windows 7 SP1 (32-bit)
  - (Requires .NET Framework – See *Appendix A*)
  - For hardware specs, see Workstation table earlier in this section
- OE Server/Workstation
  - Windows 7 SP1 (64-bit)
  - Windows Server 2008 R2 SP1
  - Windows Server 2012 R2 (requires 1 user CAL)
  - (Requires .NET Framework – See *Appendix A*)

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- For hardware specs, see tables earlier in this section based on OE server type (Simplex, Pro, or Max)
  - Workstation Terminal Server
    - Windows Server 2008 R2 SP1
    - Windows Server 2012 R2 (requires 1 Remote Desktop CAL per concurrent user or client)
    - For hardware specs, see table earlier in this section
  - Remote Comm Manager
    - Windows 7 SP1 (64-bit)
    - Windows 7 SP1 (32-bit)
    - Windows Server 2008 R2 SP1
    - Windows Server 2012 R2 (requires 1 device CAL)
    - For hardware specs see table earlier in this section
  - Standalone OPC Server
    - Windows 7 SP1 (64-bit)
    - Windows 7 SP1 (32-bit)
    - Windows Server 2008 R2 SP1
    - Windows Server 2012 R2
    - For hardware specs see table earlier in this section
  - Standalone Reporting
    - Windows 7 SP1 (64-bit)
    - Windows Server 2008 R2 SP1
    - Windows Server 2012 R2
    - Office 2010 (32-bit application)
    - Office 2013 (32-bit application)
    - For hardware specs see table earlier in this section
  - Standalone Messaging
    - Windows Server 2008 R2 SP1
    - Windows Server 2012 R2
    - Microsoft Exchange 2007
    - For hardware specs see table earlier in this section
  - Standalone ODBC
    - Windows 7 SP1 (64-bit)
    - Windows 7 SP1 (32-bit)
    - Windows Server 2008 R2 SP1
    - Windows Server 2012 R2
    - For hardware specs see table earlier in this section

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**Notes:**

- Emerson cannot provide Microsoft CALS; you must purchase them from Microsoft.
- OpenEnterprise is tested with Symantec Endpoint Protection anti-virus software. We recommend you use this on hardware that runs OpenEnterprise.
- Regardless of the operating system, turn off User Account Control (which prevents unauthorized changes to your computer) before you begin the installation process. To access UAC, select Start > and type UAC into the search box. Select the Change User Account Control Settings link. When the Change User Control Settings screen displays, move the slider control down to Never Notify and click OK. You need to reboot your

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computer for this change to take effect. Once you complete the OE install, restore your original UAC settings.

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## 5. Installing and licensing OE server software

To install and license the OE Server software:

1. Select **Install OpenEnterprise** on the OpenEnterprise software selection screen.
2. Review and accept the license agreement.
3. Select **OpenEnterprise Server** on the Setup Type menu screen.

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### Note

If a Windows Security dialog displays for Eltima software, accept and install the program.

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4. Reboot your computer to complete the installation process.
5. License the server software.
  - a. Open the License Manager application and click **Create LRF**.
  - b. Click **Get Key** to display the software registration webpage.
  - c. Sign onto the software registration webpage to display the registration options.
  - d. Click **Register** and complete the registration details webpage.
  - e. Unlock a software license, submit the license request, then click **Key File**.
  - f. Save the key file.
  - g. Click **Include Key** on the License Manager application.
  - h. Reboot your computer to complete the licensing process.

## 6. Installing and licensing OE server/workstation software

To install and license the OE server/workstation software:

1. Install .NET Framework if not already installed. See *Appendix A* for more information. When .NET is installed, insert the OpenEnterprise DVD in the drive and continue to step 2.
2. Select **Install OpenEnterprise** on the OpenEnterprise software selection screen.
3. Review and accept the license agreement.
4. Select **OpenEnterprise Server/Workstation** on the Setup Type menu screen.
5. Review and accept the graphics license agreement.
6. We recommend you accept the default installation location.
7. Click **Install** to begin the graphics software installation.
8. Select **New User** in the AppSetupUtility, and enter a **User name**.
9. Provide and confirm the **password**. Installation will proceed; it may take several minutes.
10. After reboot, login. It may take several minutes for the desktop to be configured.
11. Review and accept the Sentinel System Driver license agreement.
12. Choose **Complete** for the Sentinel setup type; then click **Install**.
13. Review and accept the graphics license agreement. We recommend you accept the default installation location.

14. Review and accept the GenLic32 notice.
15. Click **Install** to begin the graphics license installation. The installation validation may take several minutes.
16. Reboot your system and login again to continue the OpenEnterprise Solutions installation.
17. Reboot your system again and login to finish the installation.
18. License the server software.
  - a. Open the License Manager application and click **Create LRF**.
  - b. Click **Get Key** to display the software registration webpage.
  - c. Sign onto the software registration webpage to display the registration options.
  - d. Click **Register** and complete the registration details webpage.
  - e. Unlock a software license, submit the license request, and then click **Key File**.
  - f. Save the key file.
  - g. Click **Include Key** on the License Manager application.
  - h. Reboot your computer to complete the licensing process.
19. Proceed to [Activating a new OE graphics license](#) on page 16.

## 7. Installing and licensing OE workstation software

This process installs and licenses the OE workstation software on a device defined as a dedicated OE workstation. To install the OE workstation software:

1. Install .NET Framework if not already installed. See [Appendix A](#) for more information. When .NET is installed, insert the OpenEnterprise DVD in the drive and continue to step 2.
2. Select **Install OpenEnterprise** on the OpenEnterprise software selection screen.
3. Read and accept the license agreement.
4. Select **OpenEnterprise Workstation** on the Setup Type menu screen.
5. Review and accept the graphics license agreement.
6. We recommend you accept the default installation location.
7. Click **Install** to begin the graphics software installation.
8. Select **New User** in the AppSetupUtility, and enter a **User name**.
9. Provide and confirm the **password**. Installation will proceed; it may take several minutes.
10. After reboot, login. It may take several minutes for the desktop to be configured.
11. Review and accept the Sentinel System Driver license agreement.
12. Choose **Complete** for the Sentinel setup type; then click **Install**.
13. Review and accept the graphics license agreement. We recommend you accept the default installation location.
14. Review and accept the GenLic32 notice.
15. Click **Install** to begin the graphics license installation. The installation validation may take several minutes.
16. Reboot your system and login again to finalize the OpenEnterprise Solutions installation.
17. Provide server hostnames and task credentials.
18. Reboot your system to finalize the workstation installation.
19. Proceed to [Activating a new OE graphics license](#) on page 16.

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## 8. Installing Remote Comm Manager software

Remote Comm Manager enables you to create a distributed RTU communications network where RTU serial communications are handled at a remote location, such as a radio tower. To install Remote Comm Manager:

1. Select **Install OpenEnterprise** on the OpenEnterprise software selection screen.
2. Review and accept the license agreement.
3. Select **Remote Comm Manager** on the Setup Type menu screen.
4. Provide server hostnames and task credentials.
5. Reboot the system to complete the installation.

## 9. Installing standalone OPC server software

Standalone OPC Server enables you to define a computer to be a dedicated open communication server. This provides third-party access to OE using OPC. You might install this program on a PI integration server to pull OPC data into PI. To install Standalone OPC Server:

1. Select **Install OpenEnterprise** on the OpenEnterprise software selection screen.
2. Review and accept the license agreement.
3. Select **Standalone OPC Server** on the Setup Type menu screen.
4. Provide server hostnames and task credentials.
5. Reboot the system to complete the installation.

## 10. Installing standalone reporting software

The Standalone Reporting option defines a computer as a dedicated OE reporting server that connects to the OE database and configures, runs, publishes, and downloads reports. Standalone Reporting provides a suite of reporting tools – Report Scheduler, the Report Configurator, and the Report add-in – to meet your reporting requirements.

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### Note

The OpenEnterprise Report Suite requires Excel 2010 or 2012 be installed *first*. Only **32-bit** Microsoft Excel is supported. When installing Excel, ensure that the .NET Programmability Support (Microsoft Office primary interop assemblies “PIAs”) are installed. These are necessary for the OpenEnterprise Report Suite to work with Excel. The "Install Now" option should include this but to confirm, select the "Customize" Excel installation. If you already have Excel installed but do not know if the Excel PIAs are installed, re-install Excel and make sure the .NET Programmability Support option is installed.

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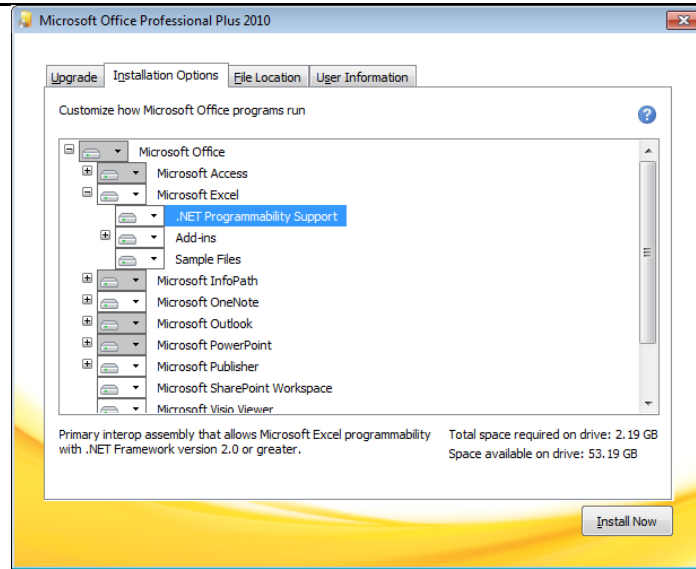


Figure 10. Verifying .NET Programmability Support

**Note**

When installing Standalone Reporting, you **must disable** the Report Scheduler in the OE Session pane on the OE server (or OE server(s) if one of a redundant pair). We also recommend you remove Report Scheduler from the session on the server(s) since Report Scheduler should only run on the computer on which you install standalone reporting software.

To install Standalone Reporting:

1. Select **Install OpenEnterprise** on the OpenEnterprise software selection screen.
2. Review and accept the license agreement.
3. Select **Standalone Reporting** on the Setup Type menu screen.
4. Provide server hostnames and task credentials.
5. Reboot the system to complete the installation.

## 11. Installing standalone messaging software

Standalone Messaging enables you to define a computer as a dedicated OE Messaging server. This option installs Messaging Server, its configuration tool, and some ODBC-related files on the identified machine, enabling the Messaging server and the configuration tool to connect to an OE database and provide system-wide messaging functionality. To install Standalone messaging:

1. Select **Install OpenEnterprise** on the OpenEnterprise software selection screen.
2. Review and accept the license agreement.
3. Select **Standalone Messaging** on the Setup Type menu screen.
4. Provide server hostnames and task credentials.
5. Reboot the system to complete the installation.



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## 12. Installing standalone ODBC software

Standalone ODBC enables third-party ODBC client applications to extract real-time, historical, or configuration data from the OE database. This allows you to use data from the OE database in these other ODBC-compliant applications (reporting packages, databases).

1. Select **Install OpenEnterprise** on the OpenEnterprise software selection screen.
2. Review and accept the license agreement.
3. Select **Standalone ODBC** on the Setup Type menu screen.
4. Reboot the system to complete the installation.

## 13. Software licensing

Once you successfully install server, workstation, or graphics software, you must then license that software. For example, the OE server software has a 30-day trial license that begins upon installation. After that 30-day trial, OE shuts down. To keep your system running, you should license the OE server software – and all software – as soon as possible. The installation process provides wizards to help you through the process of creating the license request file (LRF) and then receiving and applying the license key.

### CAUTION

Once you create a license request file (LRF), **do not change any** components on the host computer before you apply for a license key. Otherwise the process will fail. In particular, do not change:

- Hard drive format serial number
- MAC address of network interface card (NIC)
- Windows product ID
- BIOS revision number/date
- Computer name
- Processor information
- Processor speed
- Memory size
- SID
- Video card
- Hard drive model
- Hard drive serial
- Motherboard model
- CD/DVD drive
- Sound card
- Domain

We suggest that you complete the creation of the LRF, the request for the license key, and the application of the license key to the host computer in a *single continuous un-interrupted session*.

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## Docking stations/port emulators

Performing the installation in a single continuous un-interrupted session is critical if you intend to install the server software on a laptop. If your laptop is usually attached to a docking station or a port emulator, *begin and complete* the entire licensing process with your laptop either docked or undocked.

## ICONICS USB-based license dongle

To operate the workstation-based graphics software (GraphWorX™ version 9.2 from ICONICS), you must insert a USB license dongle into any workstation using that software. One or more license dongles (secure SafeNet® Sentinel™ USB dongles) is packaged with the OpenEnterprise installation DVD.

Refer to *Activating a new OE graphics license* for further details.

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### Note

OpenEnterprise 3.1 **requires** version **9.22** of GraphWorX. If you already have one or more black USB license dongles, it is likely they have an earlier version of the GraphWorX software and will not work with OE 3.1. You must upgrade the license on these dongles to use them. Contact Customer Support for more information.

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### WARNING

If you use a disk defragmentation utility (such as Norton™ Utilities), configure that utility to ensure that the GenLic32.ent, GenLic32.rst, and GenLic32.key files **do not** move during the defragmentation process. If these files do move, you **will** lose your software license. For example, with Norton Speed Disk, select **File > Options > Customize > Unmoveable Files**. Specify that the \*.ent, \*.rst, and \*.key files must not be moved. Then select **File > Options > Optimize > Save** to secure these settings.

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### WARNING

Monitor your hard drive usage to ensure at least **5 MB** of free disk space **at all times**. If the disk becomes completely full, you may lose your software license key.

## 14. Activating a new OE graphics license

Whether you are working with a “thick” workstation or a “thin” terminal services client, you need to activate the OE graphics license, which is housed on a black USB license dongle. These are secure SafeNet™ Sentinel USB dongles, delivered with the OpenEnterprise installation DVDs, and pre-loaded with GraphWorX™ version 9.22.

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### OpenEnterprise black USB license dongle (with blue label)



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OpenEnterprise 3.1 **requires** version **9.22** of GraphWorX. If you already have one or more black USB license dongles, it is likely they have an earlier version of GraphWorX and will not work with OE 3.1. You must upgrade the license on these dongles to use them. Contact Remote Automation Solutions Customer Support/Lifecycle Services for more information.

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#### Note

The blue license dongles have been discontinued and **will not** work with OE 3.1.

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Before you begin this activation process, you must have the USB license dongle, a product registration (or “P”) number, and a customer key. If you do not have a “P” number, contact Remote Automation Solutions Customer Support.

The installation (or upgrade) of OE 3.1 activates a 30-day temporary license. This ensures the continued operation of your SCADA system while your request for a permanent license is processed.

### Programming a USB license dongle

This process applies to both thick and thin clients.

1. Insert the license dongle in a USB port on a PC with Internet connections. (This does not need to be the PC on which the software is eventually used.)
2. Access the OE Graphics Licensing website ([www.oelicenses.com](http://www.oelicenses.com)).
3. Click **Login** (located in the menu to the left of the screen). The Login webpage displays.
4. Complete the Email Address field with **custserve.ras@emerson.com** and the Password field with **OpenEnterprise** (case-sensitive). Click **Login** to continue. The Web Licensing Utility webpage displays.
5. Select **Program License** from the menu at the top of the Web Licensing Utility webpage.
6. Click **Next**. A dialog displays showing the serial number of the attached USB license dongle. Click **OK** to close that dialog. The license webpage displays.
7. Copy and paste the Product Registration # and Customer Key into the appropriate fields on a single row. Click **Next** to display the Program License webpage.
8. Review the details (particularly the version number) of the license(s) to be programmed.

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9. Once you confirm that this product is what you need, select the check box to the **left** of the license details and click **Next**. A product selection verification webpage displays.
  10. Click **Complete**. The LED on the end of the USB license dongle flashes briefly as the program loads. **Do not** remove the USB license dongle during this process. When the process completes, a confirmation webpage displays. Print this page to keep a copy for your records.
  11. You can now remove the USB license dongle and insert in the PC where it is needed.

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**Note**

To ensure that the license works on the intended PC, you must install the USB license dongle in that PC **before** you boot the PC.

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### Upgrading a USB license dongle

For instructions on upgrading a black USB license dongle that contains a previous version of GraphWorX, contact Lifecycle Services.

## 15. Applying a service pack upgrade

The September 2014 release of OpenEnterprise 3.1.1 (also known as “Service Pack 1”) adds a number of enhancements and software refinements to OE version 3.1. To simplify the installation process, Remote Automation Solutions has added an **Install Service Pack 1** link to the OE splash page.

Once you **complete** the installation and configuration process detailed in the previous 14 steps, click the Install Service Pack 1 link on the splash page to begin the upgrade process. It is wizard-driven, and guides you through the steps involved in upgrading your software.

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