
User's
Manual

Model EM1EX
Environmental Monitoring System
Data Management Package
Installation Manual

IM 80P01A02-01EN

Introduction

- This installation manual explains how to install the Data Management Package (EM1EX) that is used to manage and display recoded data files and is the main menu screen in the environmental monitoring system OpreX Environmental Monitoring System (hereinafter referred to as OpreX EMS). Before installing the product, please carefully read this manual.
The download site for this software will be informed of the customer with an e-mail at the time of purchase. The latest version of the software can also be downloaded from the same download site.
- As the manuals for OpreX EMS, the following related manuals are available, including this manual.

Manual Related to Data Management Package

| Manual name | Manual No. | Contents |
|--|------------------|---|
| EM1EX Environmental Monitoring System Data Management Package User's Manual | IM 80P01A01-01EN | Explains how to use the Data Management Package. |
| EM1EX Environmental Monitoring System Data Management Package WebAPI Manual | IM 80P01A01-02EN | Describes how to use the Data Management Package WebAPI function. |

If you need the latest manual, please contact your nearest YOKOGAWA branch offices.

Notes

- The contents of this manual may be subject to change in the future without prior notice due to improvements in performance and functions. In addition, actual screen displays may differ slightly from the screen displays included in this manual.
- We have taken all possible measures to ensure that the contents of this manual are correct, but if you find any questionable points or mistakes, please contact our branch offices, branches, or sales offices.
- Unauthorized reproduction or reproduction of all or part of the contents of this manual is prohibited.
- This manual does not describe Windows functions and how to use the related recorder and applications.

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Revisions/Revision information

Feb. 2021: 1st Edition
May. 2023: 2nd Edition
Mar. 2024: 3rd Edition

Software Versions and Function Described in This Manual

| Edition | Product | Additions and Changes | Reference |
|---------|----------|--|-----------------|
| 1 | R1.01.01 | - | - |
| 2 | R1.02.01 | Description of new functions Description of version upgrade | 1.4 4.2, 5.2 |
| 3 | R1.02.02 | Data Management Package compatibility with Windows 11 | 2.1 |

Terms and Conditions

Before using this software after the installation, be sure to read the “Terms and Conditions for OpreX Environmental Monitoring System Software” that are described in the user's manual for the Data Management Package(IM 80P01A01-01).

Symbols Used in This Manual

Annotation

- Supplement** Used to supplement an explanation.
Note Explains items that the user should pay attention to when operating.

Notation of reference items

- Reference** Reference to related operations or explanation is indicated after this mark.

Symbols used in a page describing operations

- [*] Indicates the button, label, tab, and icon names, as well as keys on the keyboard.
“*” Indicates a message that is displayed on the screen.

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1. How to Use This Manual

This manual explains how to install the Data Management Package (server and client functions). After reading this chapter and understanding the installation procedure, proceed to the related chapters if necessary.

1.1. Intended Readers

It is assumed that an engineer of YOKOGAWA or a person in charge of the user's information system management department and/or network management department installs the Data Management Package. Therefore, this manual presumes that users who have the knowledge and experience listed below would execute the installation.

- Basic operations of the operating system
- Windows security (user, group and policy settings, etc.)
- Network configuration

1.2. Structure of This Manual

This manual consists of Chapters 1 to 6, shown below.

| Chapter | Title and Contents |
|---------|---|
| 1 | How to Use This Manual Explains this product and the outline of this manual. |
| 2 | Preparation Explains confirmation items before the installation and preconditions of this product. |
| 3 | Installation Outline Explains operations when the installer of this product starts up. |
| 4 | Install Server Function Explains procedures for installing the server function of this product. |
| 5 | Install Client Function Explains procedures for installing the client function of this product. |
| 6 | Uninstallation Steps Explains procedures for uninstalling this product. |

1.3. Downloading Manuals

For details on this application, see the user's manual (IM 80P01A01-01EN).

If you need the latest manual, please contact your nearest YOKOGAWA branch offices.

In addition, the installers and manuals of the related applications for the recorder, which are necessary for constructing OpreX EMS, can be downloaded from the following site.

www.smartdacplus.com/manual/

1.4. Installer Type

There are two types of installers for this application; one for the server function constructing the Web server and the other for the client function that launches the application from the Web browser. Please use the appropriate installer, depending on your requirements. The installation destinations and names of each function are as follows:

| Installer | Installation Destination | Name |
|---------------------|--------------------------|---|
| For Server Function | Data Server | OpreX Environmental Monitoring System |
| For Client Function | Monitoring PC | OpreX Environmental Monitoring System Client Tool |

For the outline for each installation, see “3 Installation Outline”.

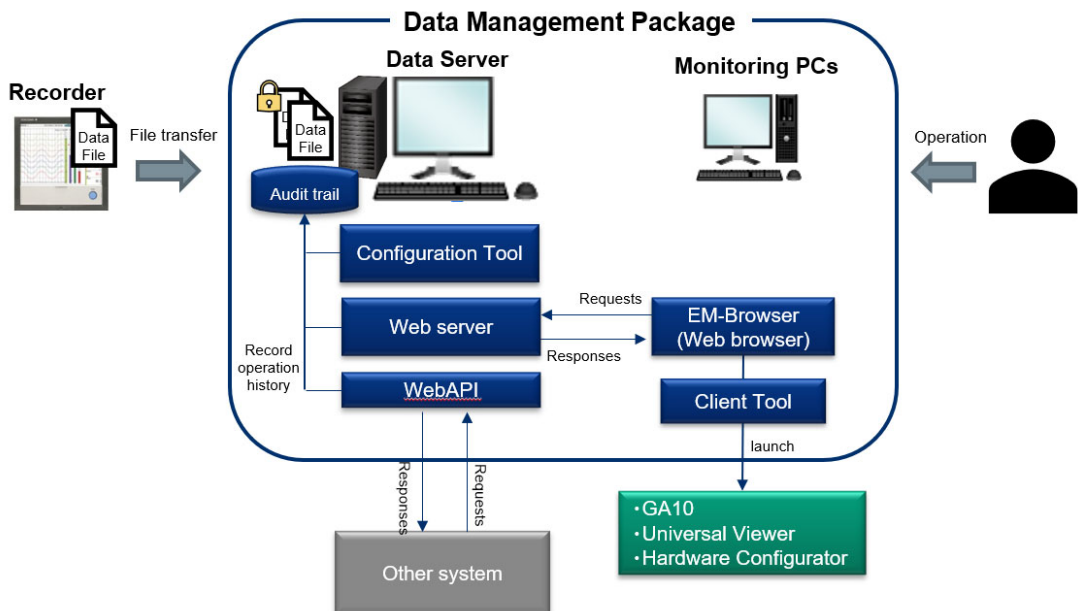
In OpreX EMS, the instrument on which the server function is installed is referred to as the Data Server, and the instrument on which the client function is installed is referred to as the Monitoring PC. The components of the Data Management Package to be installed for each instrument and their outlines are as follows. For details on them, see the user’s manual for the Data Management Package (IM 80P01A01-01EN).

Component

This section describes components making up the Data Management Package.

| Component | Description |
|---|---|
| Web server | Constructed on the Data Server. Executes various processing in response to the operation on the client side. The saved recorded data files are managed with the access privileges granted to the user account. Records the audit trail of setting change and operation. Remotely access the recorder. Generates reports by client request at defined cycle. Provides external I/F (WebAPI). |
| EM-Browser (Web browser) (Client) | Operates on the Monitoring PC. Has the role as the main menu of OpreX EMS. Possible to list recorded data files on the screen and delete them, as well as execute an archiving operation. Display the audit trail of setting changes, operations, etc. together with the audit trail of the recorder. Display various logs of the recorder. Create report plans and generate reports. The recorder alarm can be set remotely. |
| Configuration Tool | Operates on the Data Server. This is the application to perform setting change for the Data Management Package and backup and restoration operations. |
| Client Tool | Operates on the Monitoring PC. This is the resident application to work in cooperation with the software for the recorder to view recorded data files and monitor situations on a real-time basis. |

The following figure shows the installation location and the relevance for each component in the Data Management Package.



1.5. Notes at Installation

Please note the following points when installing them.

- Execute the installation with administrator authority.
- Confirm that there is enough free space on the drive to install.
- The “security alert” message dialog is displayed when launching the installer, but continue the installation by clicking the [OK] button.
- After completing the installation, confirm that the “OpreX Environmental Monitoring System” or “OpreX Environmental Monitoring System Client Tool” is installed with the program list of [Programs and Features] on the Windows control panel.
- Before installing the software, check your PC for viruses to make sure that it is not infected with viruses.

2. Preparation

Confirm the following operating environment and preconditions and perform the below setup before installation.

2.1. Operating Environment

The following is the operating environment for this application. Please check them before installation. For details on the instrument installation environment for the PC to which this application is installed, confirm the instruction manual for each instrument.

· Server Function

| Item | Environmental requirement |
|------------------|--|
| Processor | Intel Xeon E-2100 family product equivalent or faster |
| Internal memory | 8 GByte or more |
| Hard disk | 1 TB or more |
| Web server | Internet Information Services (IIS) |
| Operating system | Windows Server 2016 Standard Edition Windows Server 2019 Standard Edition |
| Web browser* | Google Chrome Microsoft Edge |

*You must install Google Chrome or Microsoft Edge to the Data Server.

· Client Function

| Item | Environmental requirement |
|------------------|--|
| Processor | Intel Core i3 equivalent or faster Windows11: Intel Core i5 or faster, and 8th generation or later Intel processor. |
| Internal memory | 4 GByte or more Windows11: 8 GByte or more |
| Hard disk | 100 MB or more Windows11: 64 GByte or more free space |
| Operating system | Windows 10 Professional Windows 10 Enterprise LTSC Windows 11 Pro Windows 11 Enterprise Windows Server 2016 Standard Edition Windows Server 2019 Standard Edition |
| Web browser | Google Chrome Microsoft Edge |

2.2. Installing Related Software

To construct OpreX EMS, it requires to install the following related applications for the recorder.

| Recorder Application | Role |
|--|--|
| SMARTDAC+ Standard Universal Viewer | Browsing and printing measurement data file |
| SMARTDAC+ Standard Hardware Configurator | View of setting file Setting change of recorder |
| Data Logging Software GA10 | Real-time monitoring of acquired data Displaying and issuing an alarm |
| Auto-backfill Tool | Complementing the recorded data file (only with event data) by using the Wirelessly Retrieved Data File (missing data) |

For requirements for the installation of each software, see each user's manuals, etc. Download their installers from the following site to install them. If they are not installed, this application may not properly work.

www.smartdacplus.com/manual/

2.3. Precondition Before Installation

Before installing the Data Management Package, confirm that the following items are already set. The contents of this manual assume that the following contents are all set.

2.3.1. Server Function

This section describes preconditions before installing the Data Server to which the Data Management Package's server function is to be installed.

- Install OS(Operating System)
- Set Computer Name
- Ethernet Communication Settings
The IP address and subnet mask need to be set for the communication between the Web server and Web client.
If the Data Server works as the domain controller, your own IP address needs to be set for the preferred DNS server.
- Install Active Directory Function and Raise to Domain Controller
To construct the domain where the Data Server works as the domain controller, install the Active Directory service function and raise it to the domain.
- Set Time and Time Zone
The audit trail to be recorded in the Data Management Package is recorded based on the time of the Data Server. For that, the clock needs to be set correctly before installation. Use the Windows w32time service to synchronize time with the instrument used as the time server.
For OpreX EMS, it is recommended to use one of the recorders as the time master and synchronize time for the Data Server and the recorder with the time master. For instructions on how to synchronize time for instruments, including the recorder, see the user's manual for the recorder in concern.
The default time zone of the OpreX EMS is the zone of the data server.

2.3.2. Client Function

This section describes preconditions before installing the Monitoring PC on which the Data Management Package's client function is to be installed.

- Install OS(Operating System)
- Set Computer Name
- Ethernet Communication Settings
The IP address and subnet mask need to be set for the communication between the Web server and Web client.
When the Monitoring PC is a domain member, the preferred DNS server needs to be the domain controller.
- Join a Domain
Join the same domain as the Data Server belongs to.
- Set Time and Time Zone
If you join the domain, the domain server automatically works as the time server.
- Install Related Software for Recorder
Install the related software by referring to "2.2. Installing Related Software".

3. Installation Outline

This section explains the outline of the installation of the Data Management Package.

3.1. Language Selection

The language used at the installation should be selected from the following.

| Language | Display |
|----------|----------|
| Japanese | Japanese |
| English | English |

Supplement:

The language to be selected here is different from the default language displayed on the application. For details on the language displayed on the application, see the user's manual for the Data Management Package (IM 80P01A01-01EN).

3.2. Server Function

This section describes contents when the server function is installed. As the components are installed that are needed for the Data Management Package, the following contents are automatically set and constructed as well.

- Install Redistributable Package
The following redistributable package(s) is installed.
 - Microsoft .NET Framework 4.8 Full
 - Microsoft Visual C++ 2019 Redistributable Package (x64)

- Create OpreX EMS Group
A group for the Data Management Package is automatically created. The user operating the Data Management Package needs to belong to one of the groups. For details on the OpreX EMS group, see the user's manual for the Data Management Package (IM 80P01A01-01EN).

- Create User Account
The Windows user to be used when constructing OpreX EMS is created.
 - dataftp1
Account to be used for authentication when transferring recorded data files via FTP from the recorder.

 - smartdac
Authentication account for the password management function of the recorder. The account is not used when the password management function is not set.

- Construct IIS (Internet Information Services)
The FTP and Web services are constructed.

Set Security Policy

The password policy and account lock policy are set to the Windows domain default policy as shown below.

Password Policy

| Item | Parameter |
|--|--------------------------|
| Enforce password history | 1 password(s) remembered |
| Minimum password age | 0 days |
| Maximum password age | 180 days |
| Minimum password length | 8 characters |
| Password must meet complexity requirements (*) | Disabled |
| Store passwords using reversible encryption | Disabled |

* For details, refer to “Password must meet complexity requirements for Windows”.

Account lock policy

| Item | Parameter |
|-------------------------------------|--------------------------|
| Account lockout duration | 60 minutes |
| Account lockout threshold | 5 invalid logon attempts |
| Reset account lockout counter after | 60 minutes |

Note:

Even if the security policy is already set in some states, the parameters will be overwritten. If the security policy is not along with the policy of your company, it needs to be set anew. The example of the setting path for the group policy with the domain controller is shown below.

Example)

[Server Manager] > [Tools] > [Group Policy Management] > [Forest: PERMS.EMS] > [Domains] > [PERMS.EMS] > [Default Domain Policy] > (Right-click > Edit) > “Group Policy Management Editor” > [Computer Configuration] > [Policies] > [Windows Settings] > [Security Settings] > [Account policies] > [Password Policy] or [Account Lockout Policy]

3.3. Client Function

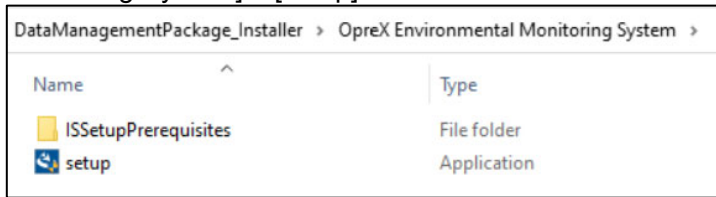
This section describes contents when the client function is installed. As the components necessary for the Data Management Package are installed, the following contents are automatically set and constructed as well.

- Install Redistributable Package
The following redistributable package(s) is installed.
 - Microsoft .NET Framework 4.8 Full

4. Install Server Function

The procedure to install the server function of the Data Management Package are shown below.

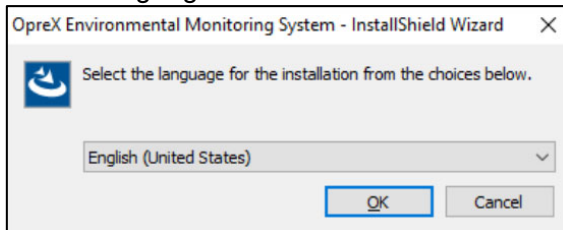
After downloading the installer for the server function, launch [OpreX Environmental Monitoring System] – [setup].



4.1. New Installation

4.1.1. Execute Installer

- Select Language



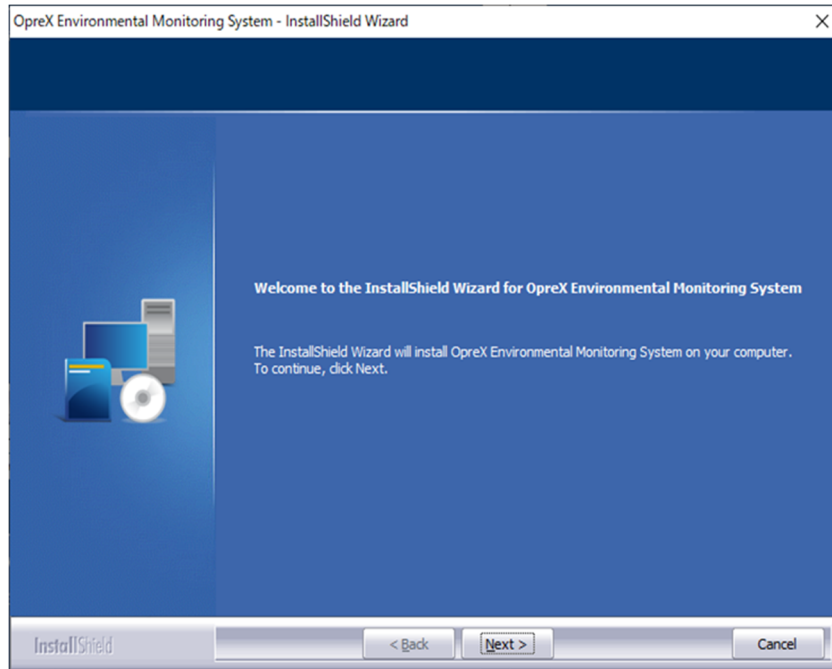
Launch the installer and select the language to use for the installer. After selecting the language, click the [OK] button. For details on the selectable languages, see “3.1 Language Selection”.

- Install Redistributable Package
The following redistributable package(s) is installed.
 - Microsoft .NET Framework 4.8 Full
 - Microsoft Visual C++ 2019 Redistributable Package (x64)

Note:

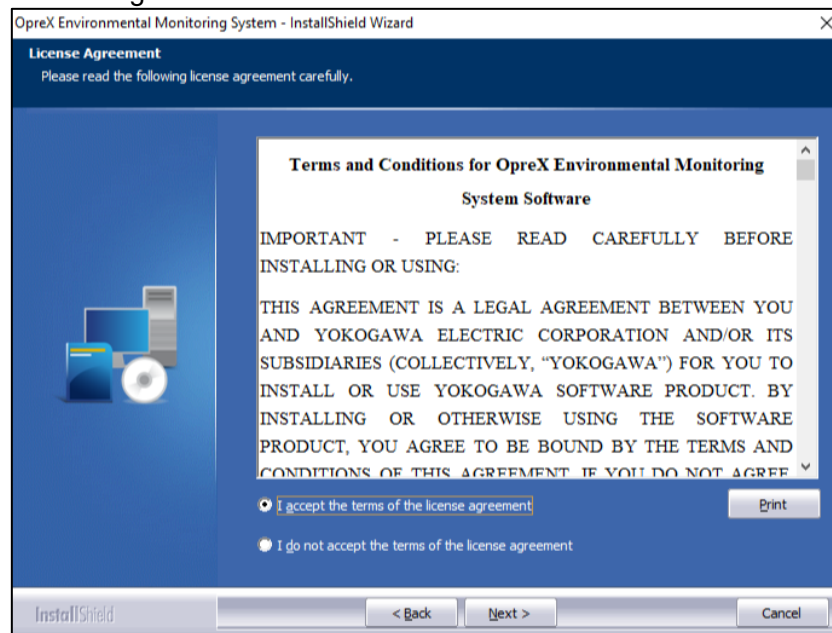
After installing Microsoft .NET Framework 4.8 Full, the user is prompted to restart it. Restart the instrument according to the message dialog. After restarting the instrument, restart the installer to resume the steps.

Start the Installer



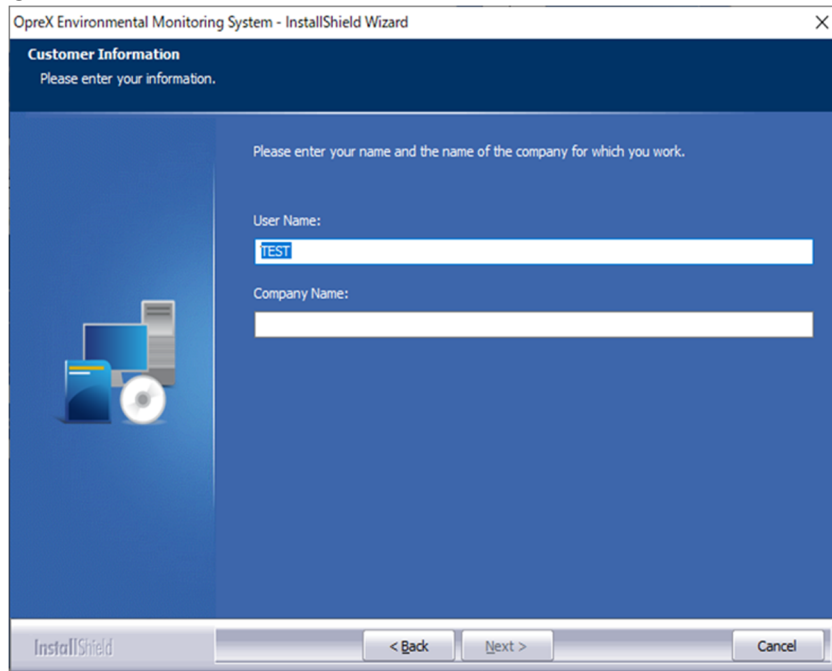
As the installer starts with the selected language, click the [Next] button to start with the installation wizard.

License Agreement



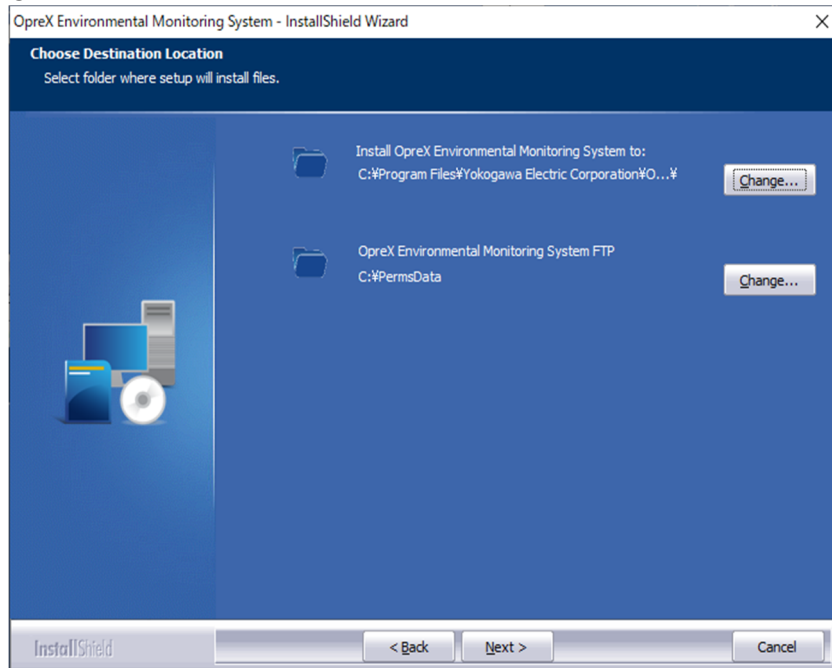
Be sure to read the Terms and Conditions described and click [Next] after agreeing to the terms of the license agreement.

Customer Information



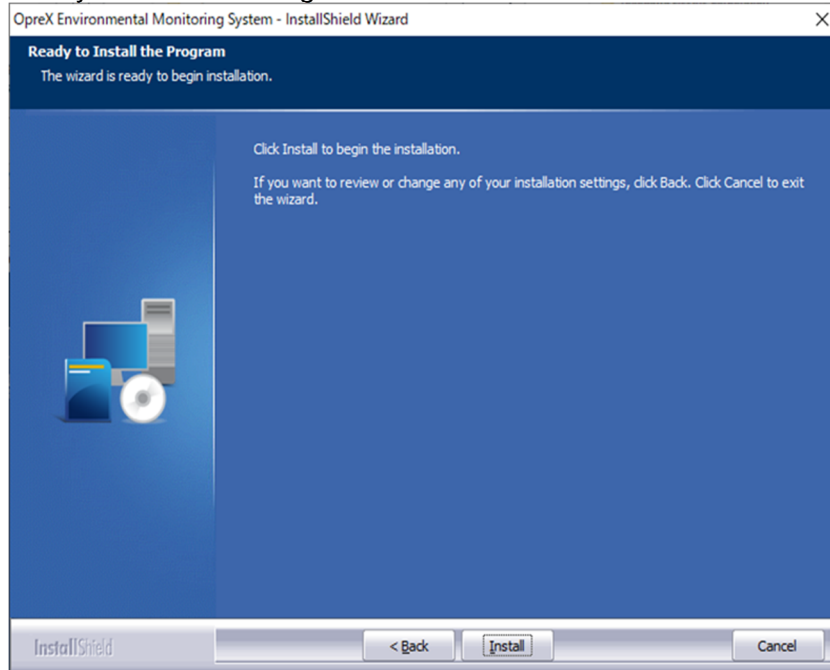
In the fields of “User Name” and “Company Name”, the system information which is set at installing OS is displayed as default. If you would like to change the information, enter the changed information, and then click [Next].

Choose Destination Location



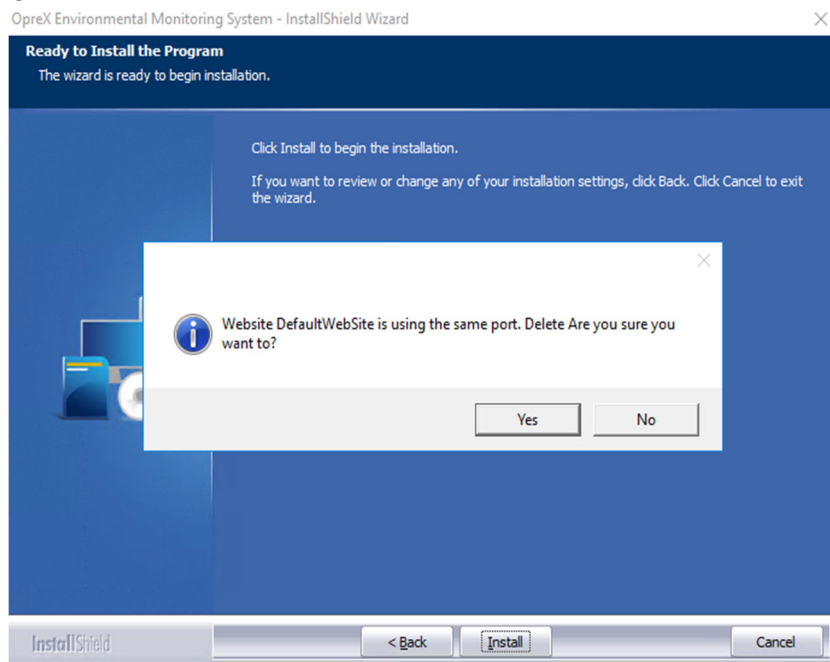
Specify the installation folder for this application and the transferred folder via FTP for recorded data files from the recorder. To change the folder(s), click the [Change] button and enter the installation folder with an absolute path, or specify the folder(s) from the folder selecting screen.

Ready to Install the Program



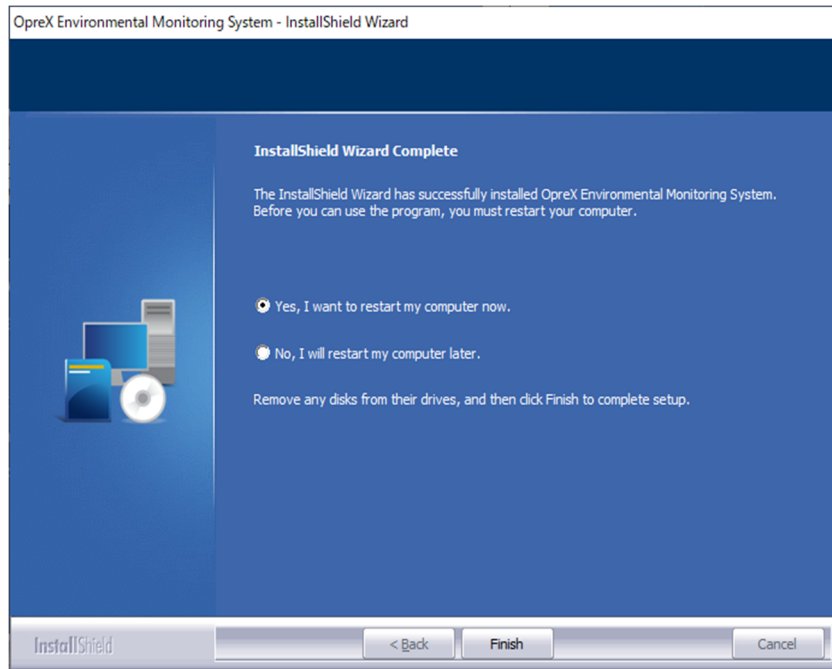
If you click the [Install] button, the installation starts. Do not close the installation window until complete.

Confirm the deletion of the default website



In case a default or existing website exists, to construct a web server for this application, a dialog box will appear to confirm the deletion of the website. Click “Yes” if it is OK to delete the website. If you click “No”, the website will not be deleted, and the installation of this application will be canceled.

Restart



The message “InstallShield Wizard is Completed” is displayed, indicating that the installation is finished, Select the option “Yes, I want to restart my computer now”, and click the [Finish] button.

4.1.2. Confirmation and Setting Items After New Installation

- Enter License Code

To use this application, you need to enter a valid license code.

On the Configuration Tool, enter the license code listed on the license sheet correctly.

For details on how to use the Configuration Tool, see the user's manual for the Data Management Package (IM 80P01A01-01EN).

- Confirm Security Policy

The installer of the Data Management Package sets the default security policy. For setting details, confirm them with "3 Installation Outline".

When the security policy is different from the one in your company, it needs resetting.

The example for the path up to the setting items is shown below.

Example)

[Server Manager] > [Tools] > [Group Policy Management] > [Forest: PERMS.EMS] > [Domains] > [PERMS.EMS] > [Default Domain Policy] > (Right-click > Edit) > "Group Policy Management Editor" > [Computer Configuration] > [Policies] > [Windows Settings] > [Security Settings] > [Account policies] > [Password Policy] or [Account Lockout Policy]

- Create Windows User Account

Create a Windows user account that uses OpreX EMS. The following is an example of the path to create the user account when using the domain controller.

For the account that uses the password management function of the recorder, it is required to check "This account supports Kerberos AES 256 bit encryption" in the account option.

Example)

[Server Manager] > [Tools] > [Active Directory Users and Computers] > [PERMS.EMS] > [Users] > [Create New]

- Settings Data Management Package

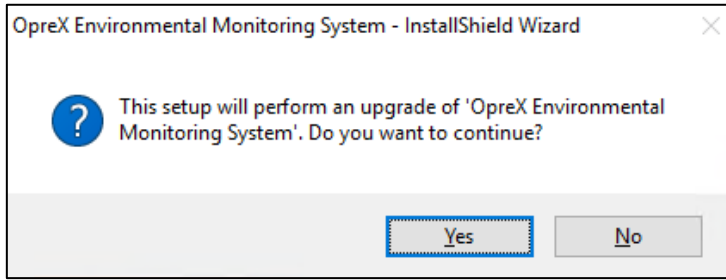
Set the following items with the Configuration Tool. For details on the setting procedure, see the user's manual for the Data Management Package (IM 80P01A01-01EN).

- 1) Register the recorder.
- 2) Configure the display settings for the recorder.
- 3) Set the basic information.
- 4) Register the required Windows user account with the OpreX EMS group.

4.2. Version Upgrade

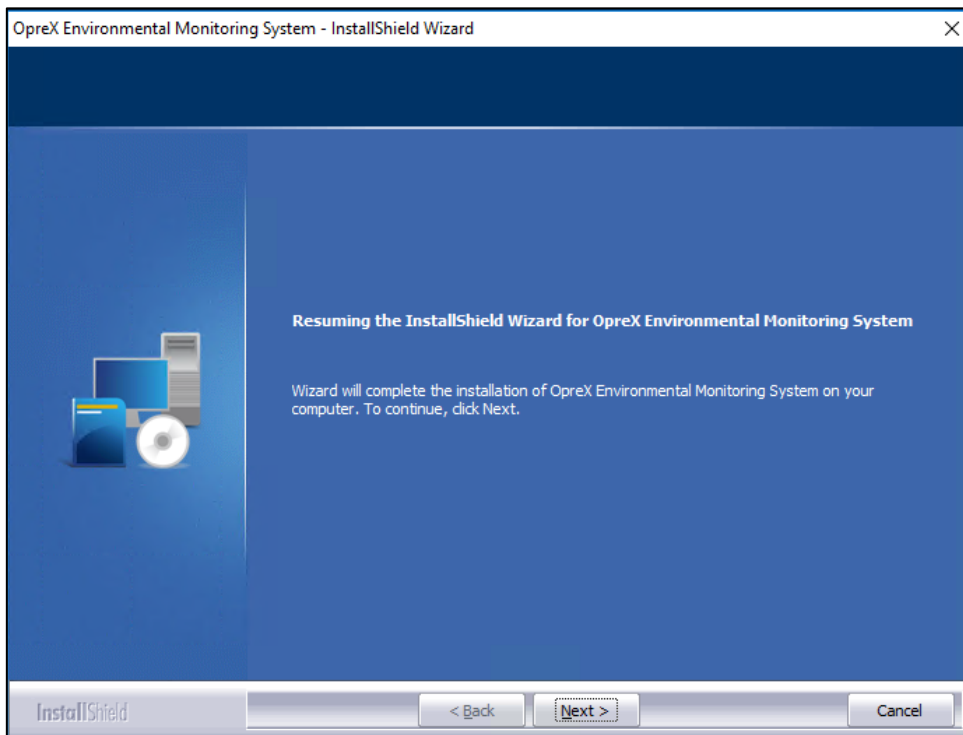
4.2.1. Execute Installer

- The version upgrade confirmation dialog is displayed



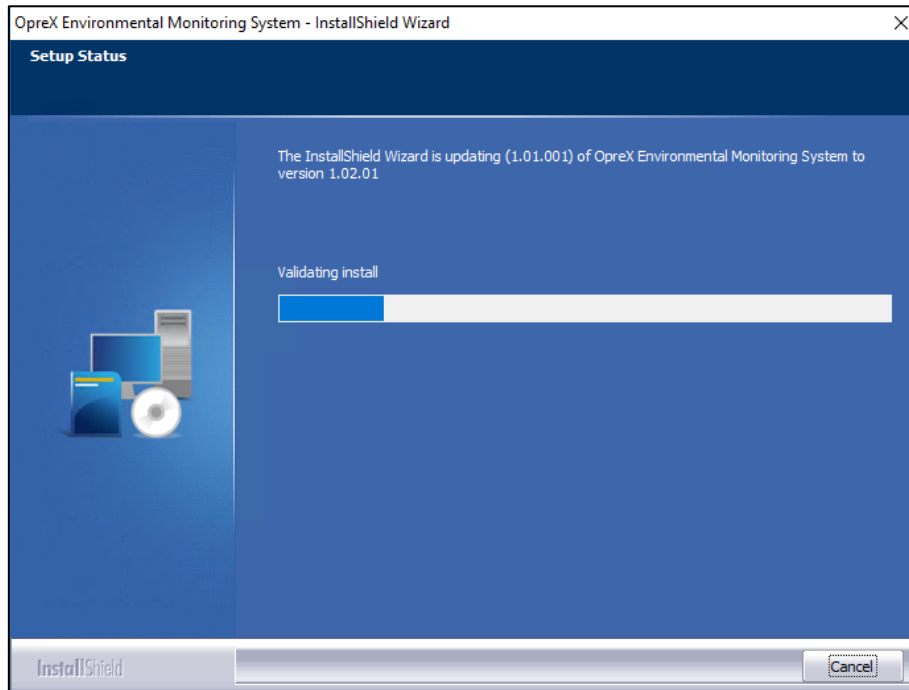
After startup, the installer will display the prompt for version upgrade. Click the [Yes] button to continue upgrading. The installation location is the same as the last installation, so you do not need to specify it again.

- Start Installer

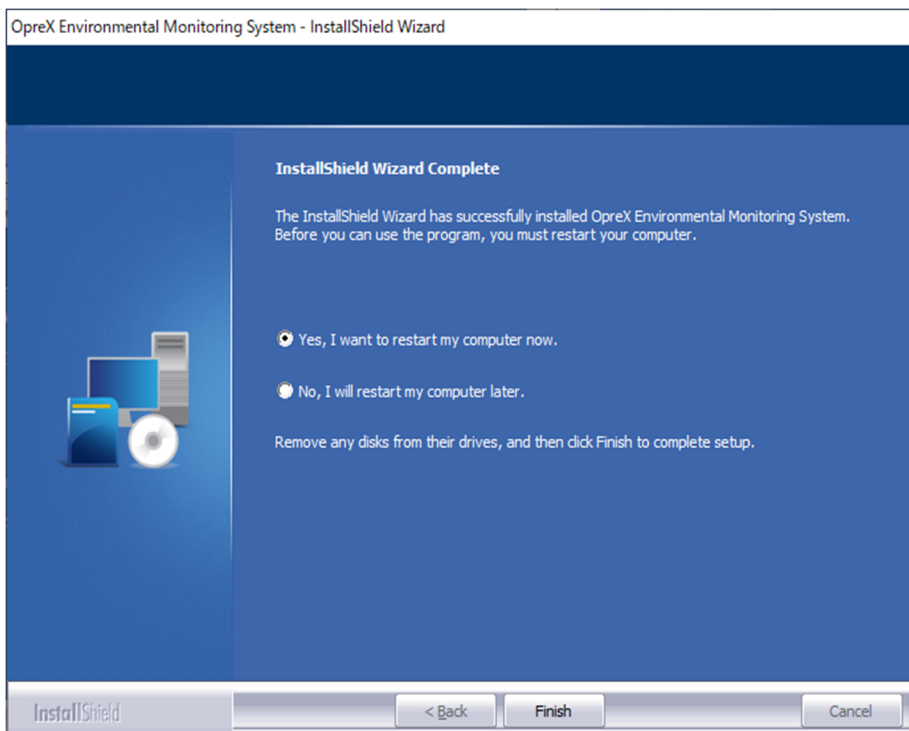


Click the [Next] button to continue the installation.

- Continue installation
During installation, the following screen will be displayed. Please wait for the installation to complete.



- Restart



The message “InstallShield Wizard Complete” is displayed, and the installation is completed. Select the option “Yes, I want to restart my computer now”, and click the [Finish] button.

4.2.2. Confirmation and Setting Items After Version Upgrade

- **Confirm License Code**
The existing license code will continue to be used.

- **Confirm Security Policy**
The existing security policy will continue to be used.

- **Create Windows User Account**
The existing user account will continue to be used.

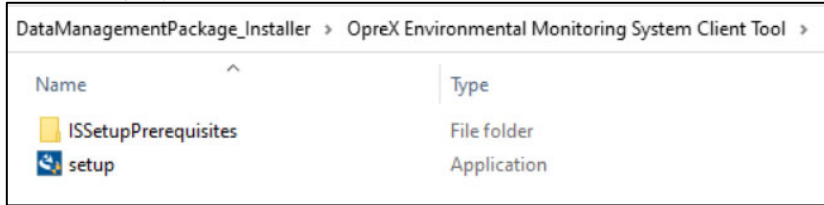
- **Settings Data Management Package**
Because the decimal point format, time zone, and daylight saving time items added in the new version need to be set, the administrator should set them through the EM-Browser screen before using them. For more information, see the Data Management Package User Manual (IM 80P01A01-01EN)

- **Registration of data files**
After the upgrade and restart, the function of data file registration to the database will be enabled, and it will register the existing saved data files in turn. (Depending on the number of files, the registration process may take several hours.)
The registered data files will be displayed in the data file list of EM-Browser. The audit trail records the registration message for each file. After all existing data files are registered, FTP transferred files will be automatically identified and registered in the database.
Please note that the data file cannot be accessed normally until the data file registration is completed. For example, in the Log Search screen or the Audit Trail screen, the record of the data file is not displayed.
In addition, because OpreX EMS manages the alarm of the recorder, the file registration operation after the upgrade may take time when there are a lot of alarms.

5. Install Client Function

The procedure to install the client function of the Data Management Package are shown below.

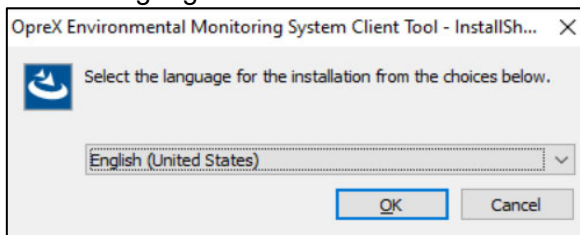
After downloading the installer for the client function, launch [OpreX Environmental Monitoring System Client Tool] > [setup].



5.1. New Installation

5.1.1. Execute Installer

- Select Language



After starting, select the language to use in the installer. After selecting the language, click the [OK] button. For details on the selectable languages, see “3.1 Language Selection”.

- Install Redistributable Package

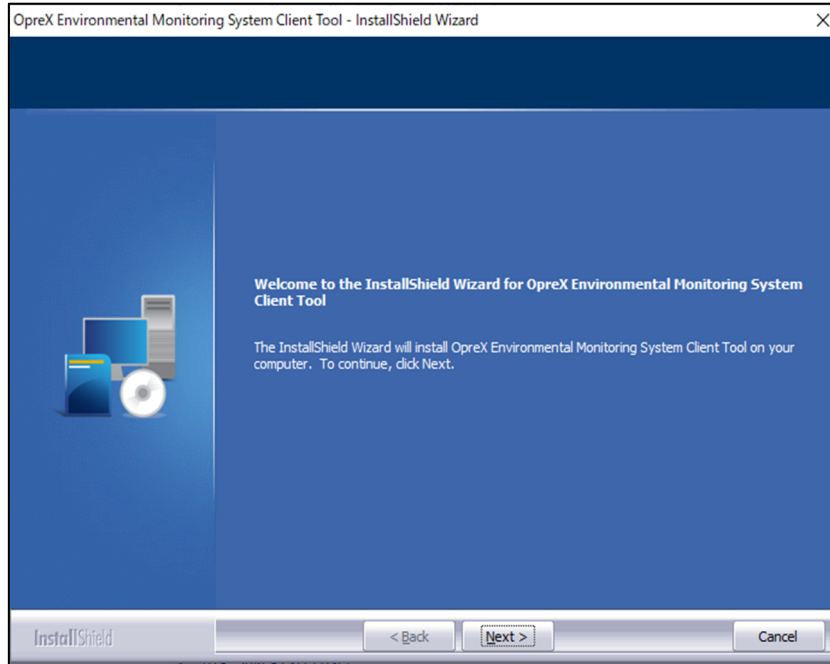
The following redistributable package(s) is installed.

- Microsoft .NET Framework 4.8 Full

Note:

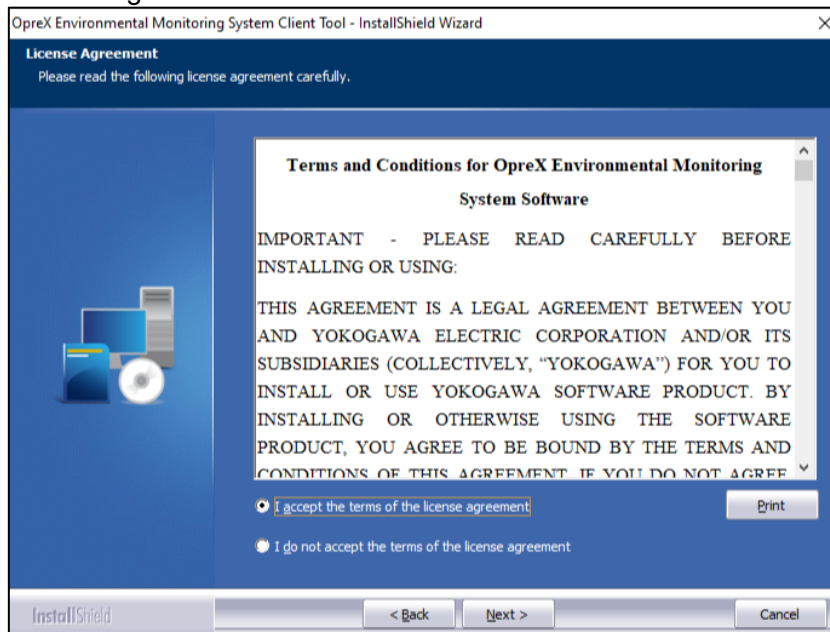
After installing Microsoft .NET Framework 4.8 Full, the user is prompted to restart your PC. Restart the instrument according to the message dialog. After restarting the instrument, restart the installer to resume the steps.

Start the Installer



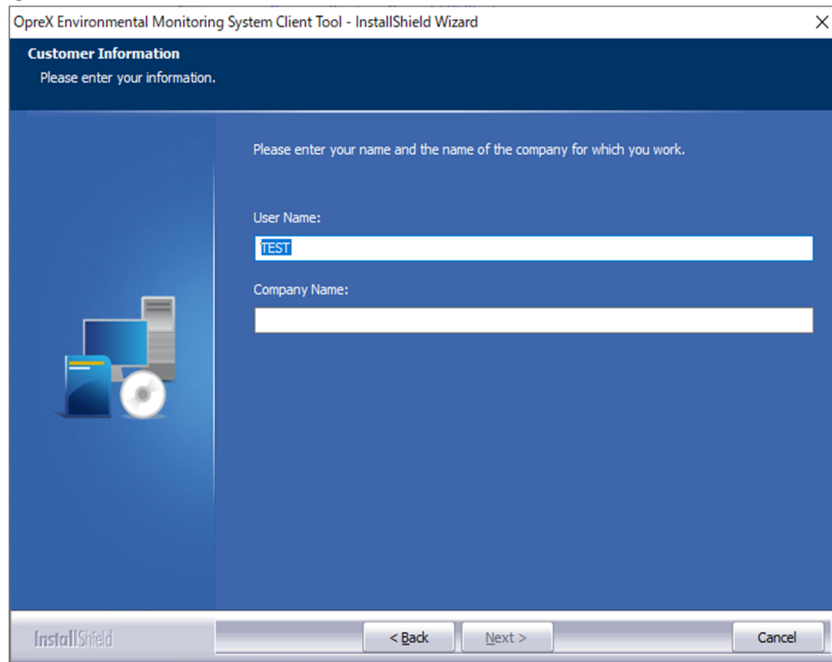
As the installer starts with the selected language, click the [Next] button to start with the installation wizard.

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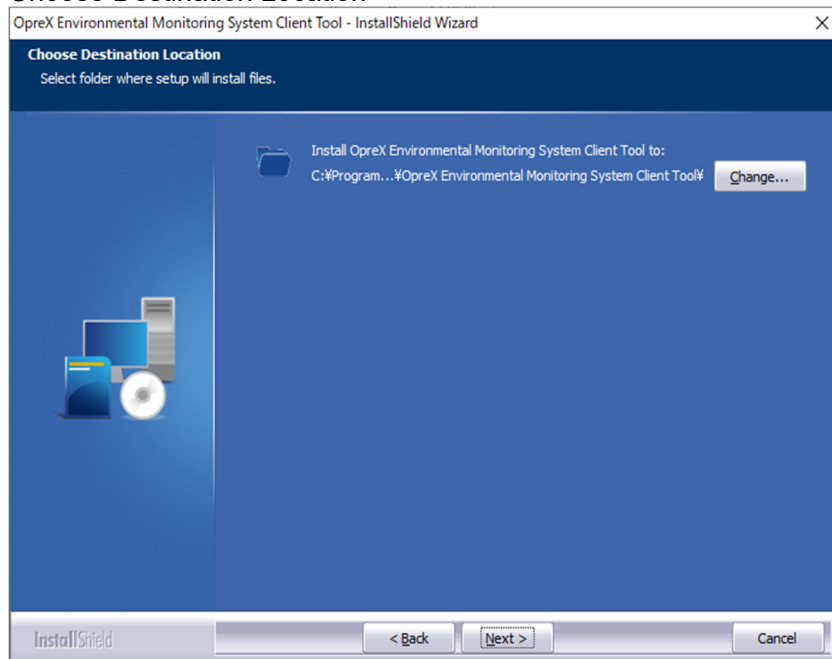
Be sure to read the conditions of use described and click [Next] after agreeing to the terms of the license agreement.

Customer Information



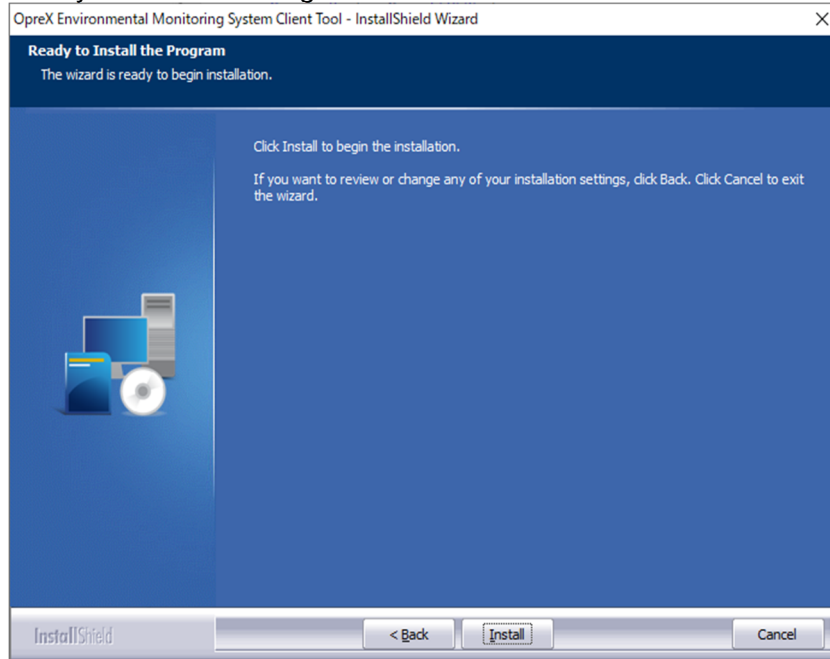
In the fields of "User Name" and "Company Name", the system information which is set at installing OS is displayed as default. If you want to change the information, enter the changed information, and then click [Next].

Choose Destination Location



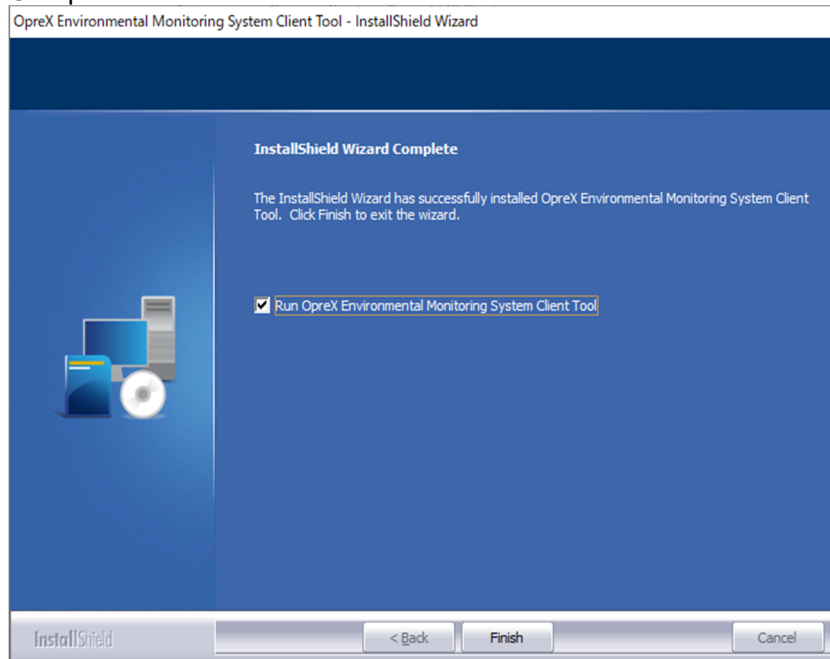
Specify the installation for this application. To change the folder, click the [Change] button and enter the installation folder with an absolute path, or specify the folder from the folder selecting screen.

Ready to Install the Program



If you click the [Install] button, the installation starts. Do not close the installation window until complete.

Complete Installation



The message “InstallShield Wizard complete” is displayed, and the installation is complete. Check “Run Opnex Environmental Monitoring System Client Tool”, and click the [Finish] button.

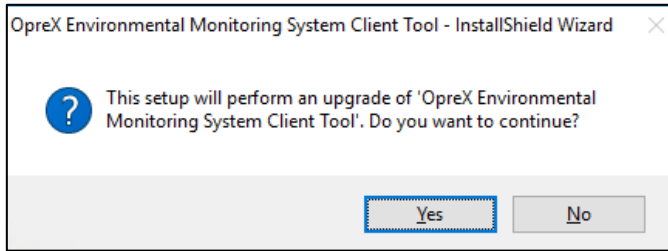
5.1.2. Operation After Installation

After installing the client function, see the user’s manual for the Data Management Package (IM 80P01A01-01EN) for details on how to use EM-Browser and the Data Management Package.

5.2. Version Upgrade

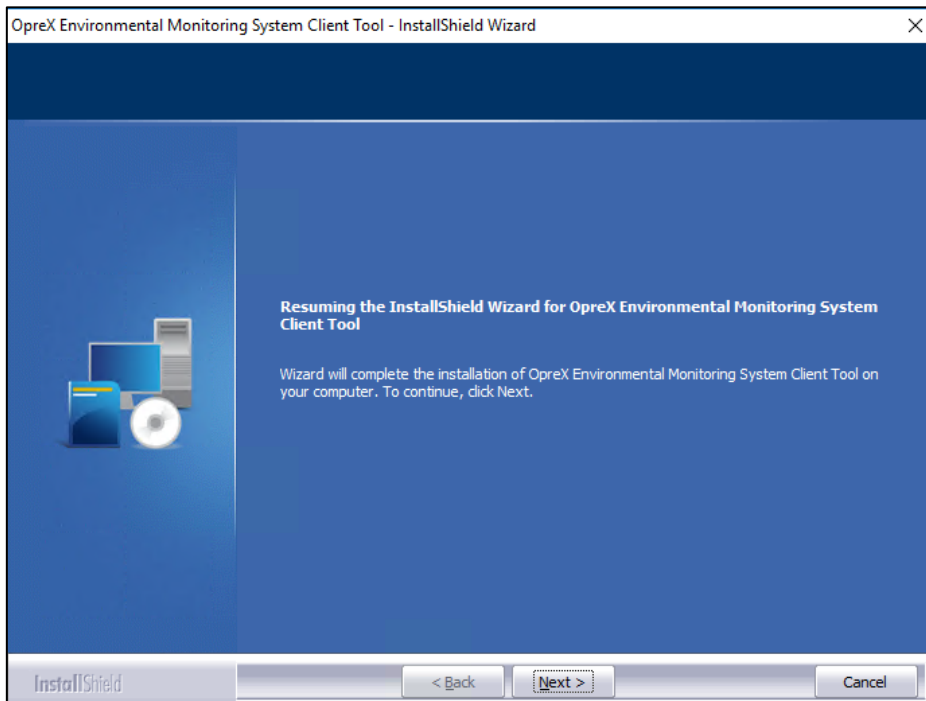
5.2.1. Execute Installer

- The version upgrade confirmation dialog is displayed



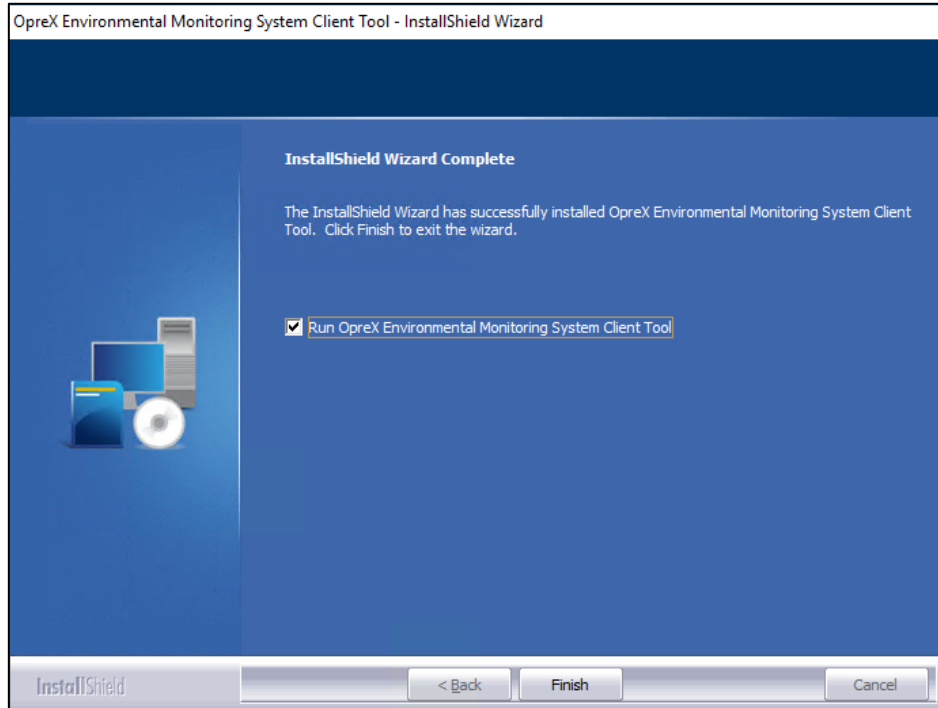
After startup, the installer will display the prompt for version upgrade. Click the [Yes] button to continue upgrading. The installation location is the same as the last installation, so you do not need to specify it again.

- Start Installer



Click the [Next] button to continue the installation.

- Version upgrade completed



"InstallShield Wizard Complete" is displayed and click the "Finish" button to end the installation.

5.2.2. Operation After Installation

The client function has not been changed, so there are no special precautions. For the usage of the client function, refer to the user manual of the Data Management Package (IM 80P01A01-01EN)

6. Uninstallation Steps

Follow the procedure below to uninstall OpreX Environmental Monitoring System.

- 1) Open [Control Panel] > [Programs and Features] on Windows.
- 2) Right-click "OpreX Environmental Monitoring System" or "OpreX Environmental Monitoring System Client Tool", and click [Uninstall].
- 3) Proceed with the uninstallation according to uninstallation dialogs to be displayed.