Grid Automation Products

Integrated Engineering Tool
Installation Guide
IET600 Ver. 5.4
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Section 1  System Requirements

1.1  Hardware Requirements

The minimum hardware requirements are:

• 300 MB of free hard disk space
• Dual-core processor
• 3 GB RAM

The recommended hardware requirements for medium to big projects are:

• 300 MB of free hard disk space
• 64bit operating system
• Quad-core processor
• 8 GB RAM
• SSD recommended for system drive

1.2  Operating System Requirements

The following operating systems are supported:

• Windows 8.1 (64- and 32-bit)
• Windows 10 (64- and 32-bit)
• Windows Server 2012 R2 (64-bit)
• Windows Server 2016 (64-bit)
• Windows Server 2019 (64-bit)

1.3  Software Component Requirements

IET600 uses some additional software components from Microsoft. If they are not contained on your basic Windows installation already, these will be installed by the IET600 Prerequisites package (see New Installation of IET600), they do not require any additional licensing from your side:

• Windows Installer 4.5
• .NET Framework 4.8
• SQL Server 2014 Express SP3
Section 2  New Installation of IET600

This chapter is valid if you install IET600 5.4 or later on a new PC. If you upgrade from an installation of IET600 5.3 FP2 or older, please see chapter Upgrading from IET600 5.3 FP2 and earlier.

2.1 Overview

The IET600 installation consists of two installation packages:

1. IET600 Prerequisites:
   Contains the above mentioned software components and configures a special MSSQL instance IETSERVER2 as a database where IET600 will later store its data.
   The IET600 Prerequisites need to be installed only for the first time on a new PC or if you are upgrading from an older IET600 5.2.x installation or if you need to install .NET Framework 4.8 offline.

2. ABB IET600 Setup:
   Installs the 5.4.x version of IET600

When inserting the USB memory stick, the following screen appears.

```
Welcome to the IET600 installation
Install ABB IET600 Prerequisites
Install ABB IET600 Setup 5.3
Installation guide for IET600
Release note for IET600
User manual for IET600
```

2.2 Install IET600 Prerequisites

1. Start the Installer Package by double-clicking on ABB IET600 Prerequisites.exe.
2. If Windows Installer 4.5 is not yet installed on your PC, it will be installed.
3. If .NET Framework 4.8 is not yet installed on your PC, it will be installed.
4. After that, a Welcome Dialog appears.
5. The only configuration needed is the path to the IETSERVER2 instance of the MSSQL Server installation.
   This is the place where the system files and logs of the MSSQL server instance. You will probably never need to bother with these files, so the default path is a good choice.
   Please observe the following restrictions:
• This path needs to be on a **local drive** (it cannot be on a network drive)
• **The folder with all its content must never be compressed** (MSSQL databases will not work when compressed).
• **The folder with all its content must never be encrypted with Microsoft EFS** (MSSQL databases use another user account and will therefore not be able to access folders encrypted for a specific user, for details see Annex, chapter MSSQL Server and Encryption).

6. Before the installation starts, you are asked for confirmation.
7. The IET600 Prerequisites are now installed. After a successful installation, you can proceed to install IET600.

### 2.3 Install IET600

The IET600 Prerequisites must be installed before IET600 can be installed.

1. Start the Installer Package by double-clicking on **Install IET600 Setup 5.4**.
2. License Agreement – Read and accept the terms of the license agreement.
3. Customer Information – optionally enter User Name and Organization into corresponding field and specify if the license is to be designated for the specified user only or all users on the computer.
4. Destination Folder – Choose the default folder (**C:/Program Files (x86)/ABB**) or specify another destination folder.
5. Click **Install** to start installation.

IET600 is now installed in the Destination folder. A Shortcut is also available on the Desktop to start the program.

### 2.4 Upgrade to .NET Framework 4.8

IET600 5.3 FP8 or later requires at least Microsoft .NET Framework 4.8. This can be installed in two different ways depending on your PC configuration.

#### 2.4.1 Install IET600 Prerequisites 5.2.5 or later

Microsoft .NET Framework 4.8 will be deployed with the IET600 Prerequisites 5.2.5 or later.

With this setup you can also update the .NET Framework of an earlier IET600 Prerequisites 5.2.x installation. No internet connection is required.

#### 2.4.2 Download .NET Framework 4.8

The .NET Framework 4.8 can be downloaded from the Microsoft Download Center.

If the following condition are fulfilled, you can upgrade the .NET Framework when you run IET600 5.4 the first time:

• An earlier version of IET600 Prerequisites (5.2.0 - 5.2.2) is already installed on your PC.
• .NET Framework 4.5 or later is installed.
• Your PC has access to the internet.

Upgrade steps:

1. Install IET600 5.4 .
2. Run IET600 5.4 .
   An error dialog will ask you for confirmation. Click **Yes** to continue.
3. On the Microsoft download page click **Download .NET Framework 4.8**.

4. Save and run the .NET Framework 4.8 web installer package.
5. Follow the Wizard to complete the installation.
6. Run IET600 5.4 again.
Section 3  Getting a License for IET600

IET600 needs a License to run.

When you obtained IET600, you should have received a Dongle that contains the License:

Connect this Dongle to a USB-Port of the PC on which you have IET600 installed (all necessary software components, drivers etc. have been installed along with IET600). It may take the system up to 10 seconds to recognize the License; after that time you can start IET600 and use it.

If you try to start IET600 and no license is found on your PC, you may get the following error message:

In this case, the Dongle has either not been plugged in or has not been recognized. If possible, correct the problem and click OK.

3.1  Restarting the License Manager Service

Occasionally it happens that after an installation, the License Manager Service does not start; or that it unexpectedly stops. If this service is not running and you try to start IET600, the following dialog will appear:
If you have administrator rights, you can start the service again manually:

Open the Services Management console (services.msc or Control Panel /Administrative Tools / Services).

Check whether the service Sentinel Local License Manager is running, otherwise start it from the context menu:

If you do not have administrator rights, you need to reboot your PC.
Section 4  Updating IET600

This chapter applies, if you have IET600 5.3 FP3 (IET600 5.3.3xx). If you had older versions (IET600 5.3.2xx or smaller), see Upgrading from IET600 5.3 FP2 and earlier.

4.1  Overview

An IET installation package has the version name included, e.g. ABB IET600 SAS Setup - Baseline 5.3.305.zip.

To allow you to easily check for available updates, IET600 provides an in-built check.

4.2  Update Concept

We distinguish between:

- Bugfixes
- Updates (adding of minor features, improvements etc.).
- Upgrades (adding of considerable new functionality).

IET600 has an inbuilt check whether any of the above updates are available (see chapter "Checking for Updates").

4.3  Bugfixes

If the version differs only in the 4th digit (e.g. 5.3.305.1 against 5.3.305.2), it is a “bugfix”.

As the older version is considered to be buggy and should not be used in future, a bugfix version will overwrite the corresponding older version with the same 1st, 2nd and 3rd digit (e.g. 5.3.305.2 will overwrite 5.3.305.1, but not 5.3.304.x).

It is recommended to always install such “bugfix” versions. They do not require a new license.

4.4  Updates

IET600 is under continuous development, small features which enhance usability, engineering efficiency etc. are added continuously. So that you may soon take advantage of these, IET600 provides “Feature Updates”.

Versions differs in the 3th digit (e.g. 5.3.11 against 5.3.10) will typically contain such improvements or additional features, but no major changes.

Such a version will be installed in parallel to existing versions; i.e. existing versions will not be removed. However, if you open a project in the newer version, it may require a migration after which a project cannot be opened in older versions. It is strongly recommended to always open a project in the older version one more time and make a backup before opening it in the new version.

Changes in the operation of IET in such versions are typically slight and can be understood intuitively, no re-training is required.
While such versions are tested against common project configurations, they very occasionally introduce a bug or change a behaviour in a way that is unexpected to the engineer. It is therefore recommended to delay an update when in critical periods of engineering; otherwise an update is recommended and uncritical as you can always go back to using an older version installed in parallel.

“Feature” updates usually require no new license, but there may be exceptions. See chapter “Checking for Updates” to find out whether a new license is required.

4.5 Major Updates

If the version differs in the 2nd digit (e.g. 5.3 against 5.2), it will contain major new features. Usually a training will be required for users to familiarize themselves with new editors, concepts or engineering processes.

Such a version will be installed in parallel to existing versions; i.e. existing versions will not be removed. If you open a project in the newer version, typically a migration will be required, after which a project cannot be opened in older versions. It is strongly recommended to always open a project in the older version one more time and make a backup before opening it in the new version.

Major updates usually will require a new license, but there may be exceptions. See chapter “Checking for Updates” to find out whether a new license is required.

4.6 Checking for Updates

1. From the Application Menu, choose Options

2. Open the Updates tab. It will show you the current IET600 version.
3. To see whether updates are available, click on **Check for Updates**:
4. Either you will be informed that no updates are available:
Or you will see available updates, as shown below.
If this update is available to you free of charge (which implies that it can be used with the same license), the **Download Updates** button will be enabled.
If you need to acquire a new license (for which you need to pay), you will be informed accordingly. In this case, the **Download Updates** button will not be enabled, you will receive your software through other channels.
5. If you click on **Download Updates**, you will be offered a Zip-file for download and you can select where to save it. A successful download will be confirmed:
6. Now you can install the downloaded Zip file as described in chapter New Installation of IET600). Normally, no new prerequisites should be needed, otherwise you will be informed accordingly in Step 4.
Section 5  Upgrading from IET600 5.3 FP2 and earlier

5.1 Introduction

IET600 uses MSSQL as a database to store its projects; MSSQL is installed in the ABB IET600 Prerequisites setup.

Until IET600 5.3.2xx MSSQL Server® 2008 Express was used. Any earlier IET600 version used the same MSSQL version, therefore there was no need for any upgrade.

To support Windows 10 (which IET600 5.3 FP3 or newer supports), MSSQL Server® 2014 Express is required. It will be installed in parallel to the older MSSQL Server® 2008 Express.

New projects created with IET600 5.3 FP3 or newer will therefore be residing on a different database than the old ones. Unlike in earlier updates, you will not see any projects from older IET600 versions, but must take an additional step to transfer them to the new database, from where they can then be migrated and opened like in earlier IET600 Updates.

Installation procedure and project migration will now be described in detail.

5.2 Preliminary Remarks

You may use both MSSQL Server® versions in parallel, if you need to work with both IET600 5.3 FP2 (or older), and IET600 5.3 FP3 (or newer) on the same PC. Also for the upgrade described here, you need both versions.

To prevent conflicts between the two MSSQL server products, several names and folders have been changed in IET600 5.3 FP3. The following table gives an overview of the differences:

<table>
<thead>
<tr>
<th></th>
<th>IET600 5.3 FP2 or older</th>
<th>IET600 5.3 FP3 – FP5</th>
<th>IET600 5.3 FP6</th>
</tr>
</thead>
<tbody>
<tr>
<td>IET600 Prerequisites</td>
<td>Version 5.1.x or older</td>
<td>Version 5.2.x – 5.2.3</td>
<td>Version 5.2.4</td>
</tr>
<tr>
<td>MSSQL Server Product</td>
<td>MSSQL Server® 2008 Express</td>
<td>MSSQL Server® 2014 SP2 Express</td>
<td>MSSQL Server® 2014 SP3 Express</td>
</tr>
<tr>
<td>MSSQL Server Instance Name</td>
<td>IETSERVER</td>
<td>IETSERVER2</td>
<td></td>
</tr>
</tbody>
</table>
| Project Subfolder   | \
| project            | \
| projectSQL2014     | \
| Project Backup File Extension | .ietprj | .ietprj2 | .ietprj2 |
### 5.3 Upgrade IET600 Installation

To make it easy for you, you can get access to IET600 5.4 the same way as any normal update (see chapter "Checking for Updates"). However, not only the comparatively small IET600 installation package will be downloaded, but a new version of the IET600 Prerequisites which are more than 10 times the size.

Therefore, please do not be surprised if download and installation take considerably longer than usual.

You can verify that everything went well after the installation by opening the Microsoft "Computer Management" Dialog:

<table>
<thead>
<tr>
<th>IET600 5.3 FP8 or newer</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>IET600 Prerequisites</td>
<td>Version 5.2.5 or newer</td>
</tr>
<tr>
<td>MSSQL Server Product</td>
<td>MSSQL Server® 2014 SP3 Express</td>
</tr>
<tr>
<td>MSSQL Server Instance Name</td>
<td>IETSERVER2</td>
</tr>
<tr>
<td>Project Subfolder</td>
<td>\IETProjects\project_SQL2014</td>
</tr>
<tr>
<td>Project Backup File Extension</td>
<td>.ietprj2</td>
</tr>
</tbody>
</table>
In the Dialog, the select **Services** and scroll down to **SQL** ...

In case of an upgrade, the services should be configured as shown in the above image.
6.1 Repair IET600

Today’s Microsoft operating systems have miscellaneous mechanisms to either prevent accidental deletion of program components or restore them automatically. A Repair of an IET600 installation should therefore be needed only rarely.

If you decide to do a Repair, you need to have the Installation package of the particular IET600 version, which you want to repair, available.

1. Run the Installation package ABB IET600 Setup.exe.
2. The first dialog is just for information. Confirm that the IET600 version number is correct and click Next to continue:

3. The following dialog appears, select Repair, then Next:
4. One more dialog will ask you for confirmation. If you confirm with **Install**, the IET600 version will be repaired.

Repairing an IET600 installation will not repair a defective MS SQL Server installation which is also needed by IET600 for correct functioning.

### 6.2 Repair IET600 Prerequisites

A ‘Repair’ of IET600 Prerequisites should be needed only rarely as most components are part of the operating system (for these components, the IET600 Prerequisites just ensure that they actually exist in older version of the operating system).

In rare cases, the MSSQL Server may need a repair. You can try a repair directly; experience shows however, that quite often, MSSQL IETSERVER2 needs to be removed first to ensure a clean install/repair afterwards.

If you decide to do a ‘Repair’, you need to have the Installation package of the particular IET600 Prerequisites, which you want to repair, available.

1. Run the Installation package **ABB IET600 Prerequisites.exe**.
2. The first dialog is just for information. Confirm that the IET600 Prerequisites version number is correct and click **Next** to continue:
3. The following dialog appears:

Select **Repair**, then **Next**.

4. One more dialog will ask you for confirmation. If you confirm with **Install**, the IET600 Prerequisites version will be repaired.
Section 7  Removing older IET600 versions

An IET600 version can be removed by:
1. using the program management tool available in 'Control Panel'.
2. re-running the Installer Package (not recommended)

Uninstalling an IET600 version removes only this particular version. Other versions as well as data such as IET projects, project backups, licenses etc. will not be removed.

7.1  Removing IET600

7.1.1  Remove IET600 via Installation Package

You need to have the Installation package of the particular IET600 version, which you want to remove, available.

1. Run the Installation package ABB IET600 Setup.exe.
2. The first dialog is just for information. Confirm the version number and click Next to continue:

3. The following dialog appears, select Remove, then Next:
4. One more dialog will ask you for confirmation. If you confirm with Remove, the IET600 version will be removed.

7.1.2 Remove IET600 via Control Panel

If you do not have the original IET600 Installation package available, you can also remove IET600 from the Control Panel.

1. From the OS Main Menu, open the Control Panel.
2. Open the appropriate program management tool:
   - Programs and Features in Windows
3. Locate the IET600 version you want to remove and open it by double-clicking. See chapter “Remove IET600 Prerequisites via Installation Package” for details on the remaining steps.

7.2 Remove IET600 Prerequisites

7.2.1 Introduction

The IET600 Prerequisites 5.2.x install the following:

- System components which cannot be uninstalled without potentially affecting other programs.
- MS SQL Server 2014 with the Database instance IETSERVER2

Removing IET600 Prerequisites will not remove any of those components, but will only remove some few Registry entries. Once you remove IET600 Prerequisites, you may not be able to install IET600 packages.

If you intend to remove the MSSQL Server component, please see chapter Remove MSSQL/IETSERVER for instructions.
7.2.2 Remove IET600 Prerequisites via Control Panel

The IET600 Prerequisites do not show up in the system as programs which can be uninstalled; uninstallation this way is not possible.

7.2.3 Remove IET600 Prerequisites via Installation Package

1. Run the Installation package ABB IET600 Prerequisites.exe.
2. The first dialog is just for information. Confirm the version number and click Next to continue:

3. The following dialog appears, select Remove, then Next:
4. One more dialog will ask you for confirmation. If you confirm with Remove, the IET600 version will be removed.

7.3 Remove MSSQL/IETSERVER

7.3.1 Introduction

When using MSSQL, it is installed as different instances which are independent of each other. Unfortunately, when uninstalling it, this is made apparent only relatively late in the uninstallation process.

7.3.2 When not to Remove MSSQL Instances

While you are using IET600 5.3 FP3 and newer, you must not uninstall IETSERVER2.
While you are using IET600 5.3 FP2 and older, you must not uninstall IETSERVER.
For an Upgrade from IET600 5.3 FP2 and older to IET600 5.3 FP3 and newer, you need both IETSERVER and IETSERVER2 instances.

7.3.3 When to Remove MSSQL Instances

It is considered good security practice to remove applications which you do not need anymore. This is also true for an MSSQL Server Instance.

If you uninstall any such instance, be sure to export or archive all projects from within IET600 before, otherwise your project data may be lost!

Valid cases in which you might want to uninstall an MSSQL Server instance are:
• You have upgraded all projects from IET600 5.3 FP2 and older and do not intend to use an older IET600 version anymore.
• You shift IET600 from a PC to another one, you have exported all projects and now want to uninstall all IET600 components in the first PC.

7.3.4 Removal of IETSERVER Instance

Below we show how to remove an older IETSERVER instance. You might want to do this, if you have upgraded from IET600 5.3 FP2 and older and have upgraded all projects to the newer version

1. Navigate to Control /Programs /Uninstall a Program:
2. Scroll Down to Microsoft SQL Server 2008; right-click and select Uninstall / Change.
3. The following dialog opens:

   Select Remove.
4. Before doing anything, the system performs several checks:
If all checks pass, click **OK**.

5. In the next dialog, you can select the instances you want to remove. Select the instance you want to remove (in our example IETSERVER). (The other instances are independent, so there is no danger that you will affect other programs depending on other instances).

Select **Next** to continue.

6. Next you will be asked which features to uninstall. Select only features under the IETSERVER section, not under other sections.
7. MSSQL Server will check whether anything blocks the removal.

Select **Next** to continue.

8. MSSQL Server lets you confirm what it intends to remove, before starting the removal:

Select **Next** to continue.
Select **Remove** to start the removal process.
The IET600 program folder can be found under C:\Program Files (x86)\ABB, as shown below:

- Program folder
Section 9  Annex

9.1  Software Under Open Source Licenses Used in IET600

For the software mentioned in this chapter, license conditions other than the IET600 ALC apply.

9.1.1  LumenWorks.Framework.IO

IET600 includes LumenWorks.Framework.IO, a CSV reader library.

LumenWorks.Framework.IO is licensed under the MIT License, a copy of which can be found in:

C:/Program Files (x86)/ABB/IET600 5.x.x/SADesigner/Bin/MIT License.txt

LumenWorks.Framework.IO is made available by its author on the following Website:
https://www.codeproject.com/Articles/9258/A-Fast-CSV-Reader

9.1.2  Log4Net

IET600 includes Log4Net, a library providing logging services. Log4Net is software developed by the Apache Software Foundation (http://www.apache.org) and is licensed under the Apache 2.0 License, a copy of which can be found in:

C:/Program Files (x86)/ABB/IET600 5.x.x/SADesigner/Bin/Apache 2.0 License.txt

Log4Net is made available on the following Website:
https://logging.apache.org/log4net

9.2  Known MSSQL Server Installation Problems

When installing the IET600 Prerequisites, occasionally, they do not install correctly. Almost exclusively, this is due to a problem in the installation of MSSQL Server.

The following chapters provide you some guidance what you can check in such a case.

9.2.1  Incompatibility of MSSQL Server 2008 with MSSQL Server 2008 R2

IET600 5.3 FP2 and older versions rely on MSSQL Server 2008. Even though the name may suggest otherwise, this version is not compatible with MSSQL Server 2008 R2 as the shared components of each version will overwrite those of the other version and render it useless.

If you have any other application which requires MSSQL Server 2008 R2, the only solution is to use IET600 5.3 FP3 with MSSQL Server 2014 (older projects from another IET600 installation can be imported via *.ietprj files).
9.2.2 Verify Existing IETSERVER Instance(s)

1. Open the Management Console (Right-Click Computer Icon on Desktop -> Manage)
2. Select Services, scroll down to SQL ...
3. You should now see the following (the older IETSERVER items only exist, if you have upgraded from an earlier installation, the two IETSERVER2 items must appear). Verify the status of each item according to the picture below:

![Services](image)

4. If the services are there, but SQL Server is not started, try to start it manually (right-click on the service -> Start). If it does not start now, it may provide you an error message indicating what has gone wrong.
5. If the services are not there, the MSSQL installation has failed.

9.2.3 Installation Fails due to Pending Reboot

After that, the most common reason for a failing MSSQL installation is a pending reboot. Although the installer tries to find out about pending reboots, there are several such mechanisms in Windows, and quite often a pending reboot is overlooked.

Reboot your PC. After reboot, before you try again to install the IET600 Prerequisites, please check in the Task Manager in the Process Tab, if one or several msiexec.exe processes are running.

If so, already another installation process has started which will interfere again with the MSSQL installation. This is commonly encountered in a new PC of an older Microsoft OS version (e.g. Windows 7), the OS may download updates and security patches for 1-2 hours, and some of those require a reboot. In such cases, it is recommended to wait till at least OS and Virus Scanner are fully updated.

9.2.4 MSSQL Server and Encryption

It becomes more and more common to encrypt data to protect them (e.g. due to loss of a notebook).

There are some basically different versions of encryption:

- Disk encryption encrypts the whole disk, on mounting the disk, its contents are decrypted and provided to the user. Products are e.g. Microsoft Bitlocker or TrueCrypt. This can be used concurrently with MSSQL Server.
- File-based encryption. This is most commonly tied to a User Account, so that designated files (e.g. all files below C: /Data ) are encrypted with a user-specific key. Products are e.g. Encrypting File System (EFS) provided by Microsoft's operating systems.

As MSSQL Server has its own account to access its files and system databases, such systems are only compatible, if several user accounts can be made to use the same key. This is not the case for EFS encrypted files, you need to specifically exclude all databases and folders used by MSSQL from this kind of encryption (per default, these are the folders C: /Data /IETDatabases and C: /Data /IETProjects ).
Declaration

We, Hitachi Energy Sweden AB, SE-721 59 Västerås, Sweden, declare under our sole responsibility that the family of apparatus:

Bay Control Type: REC650, Ver. 1.0

acc. to Product Guide 1MRK 511211-BEN
to which this declaration relates is in conformity with the following relevant Union harmonization legislations:

Directives

- 2014/30/EU EMC Directive
  Official Journal of the EU (L96, 29/03/2014, p. 79-106)
- 2014/35/EU Low Voltage Directive
  Official Journal of the EU (L96, 29/03/2014, p. 357-374)

Application of the objects

The product is intended for use in the industrial environment and to protect high voltage or high-power apparatus, and thus normally used in a harsh electromagnetic environment near high voltage apparatus.

Harmonized Standards

References to the relevant harmonized standards or other technical specifications to which conformity is declared:

- EN 60255-26: 2013 Electromagnetic compatibility requirements
- EN 60255-27: 2014 Product safety requirements

Authorization

Signed for and on behalf of:

Marko Kovacic (PM)

Date

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