



ABBYY

ABBYY® Timeline 6.1.3

Deployment Guide on Windows Systems

ABBYY® Timeline 6.1.3 - Deployment Guide

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About This Document

This deployment guide is intended for system administrators and engineers. It includes instructions for installation and configuration of ABBYY Timeline 6.1 on Windows.

About ABBYY Timeline

ABBYY Timeline is a Process Intelligence platform featuring advanced process discovery, analysis, monitoring, simulation, and task mining. It uses the latest artificial intelligence (AI) to enable enterprises to automatically build an interactive digital twin of business processes that reveals inefficiencies and process bottlenecks. With this insight, they can apply automation where it will have the greatest impact and predict future outcomes.

ABBYY Timeline employs an exciting new patent-pending approach to process intelligence called Timeline Analysis which allows users to load events from a variety of systems and in different formats which it then automatically organizes into its corresponding process instances and allows them to be analyzed with a variety of visualization, discovery and query techniques. ABBYY Timeline accepts event data from any number of systems of record and automatically reconstructs the underlying business process logic behind the data. A variety of pre-built analyses are ready to quantify your process performance, identify your process execution issues and perform root cause analysis. The ABBYY Timeline platform also supports operational monitoring through its continuous assessment of new event data to determine if any adverse conditions occur and can immediately notify you or other business operations personnel so you can act.

The ABBYY Timeline engine consumes data from a variety of sources to detect and present detailed views of your business processes. This is often the same exact data being used today for other simpler analyses. This new insight is delivered via a variety of new process and timeline visualization tools developed to not only make these new insights easier to understand but also to allow users to manipulate the information to gain a deeper understanding of those processes. Users armed with this insight have concrete facts on which to take actions to improve operational efficiency by promoting clearly superior best practices and eliminating costly inefficiencies that previously went undetected.

Using advanced algorithms, ABBYY Timeline extracts and reads the time stamps used to record specific events along your processes. The software then visually models these time stamps in such a way that you can instantly identify deviations from an ideal process flow – to find the root cause of a problem that may be costing your business money.

ABBYY Timeline is aimed for use by anyone involved in business process improvements of any type of scale or nature.

ABBYY Timeline Components

Whether you use Timeline via ABBYY’s SAAS instance or installed on-premises the recommended configuration of Timeline requires 3 key components:

1. The Timeline core (either hosted by ABBYY or installed on-premises).
2. Recorder which captures individual users’ desktop sessions.
3. Recording Service that manages the deployed Recorders.

Recorders and Recording Service must always be on-premises - local to the users being recorded. There is no difference in functionality whether Timeline is accessed via ABBYY’s cloud instance or installed locally.

This guide provides instructions on deploying ABBYY Timeline on Windows systems. For more information on Recording Service, Recorders, and Recording Service Agents, see **Recording Service Deployment Guide on Windows Systems**.

The purpose and functions of platform components are described in the table below.

Component	Description
ABBYY Recording Service	<p>Collects user interaction logs from multiple users over time and allows to submit obscured data into ABBYY Timeline.</p> <p>It is only on-premises and includes databases and website.</p>
ABBYY Recording Service Agent	<p>Processes captured logs within Recording Service. It is always installed with Recording Service by default.</p> <p>You can install separate agents on additional machines to extend the resources of your main server. The processing will be distributed between the main server and these auxiliary agents.</p>
ABBYY Recorder	<p>Captures individual users’ desktop sessions.</p> <p>It is only on-premises and includes Recorder, Recorder Log Viewer, and browser extensions for Google Chrome, Mozilla Firefox and Microsoft Edge.</p>
ABBYY Recorder Log Viewer	<p>Allows users to view the logs recorded by ABBYY Recorder.</p>

Component	Description
<p>ABBYY Timeline</p>	<p>Timeline analyzes user-desktop interaction data to assist organizations in understanding how people work and how tasks are completed. Combined with process details mined from system event data, Task Mining enables organizations to enhance operational efficiency, improve customer experience, and accelerate impactful digital transformation.</p> <p>It accelerates digital transformation time to value by automating how you discover, analyze, monitor, and improve your processes.</p> <p>It is either hosted by ABBYY or installed on-premises. There is no difference in functionality whether Timeline is accessed via ABBYY's cloud instance or installed locally.</p>

Deployment Workflow Guideline

The instruction below walks you through installation and initial setup of the ABBYY Timeline system, step-by-step.

Step 1. Make sure your computers are ready for ABBYY Timeline system

Before you begin installing ABBYY Timeline system:

1. Check the [system requirements](#)¹⁰.
These requirements help you know whether your computers support ABBYY Timeline components.
2. Apply the latest Windows and other program updates.
These updates ensure that your computer has the latest security updates.
3. Reboot.
The reboot ensures that any pending installs or updates don't hinder the ABBYY Timeline components install.
4. Free up space.
Remove unneeded files and applications from your %SystemDrive%, as well as discs that you intend to use, for example, to store the Timeline or Recording Service databases.
5. If you intend to configure HTTPS, please visit the [Using HTTPS](#)²³ section.

Step 2. Install ABBYY Timeline

1. Check [before you begin](#)¹² section before installation.
You will need to set up Local Security Policy and verify machine settings.
2. Run the **ABBYY-Timeline-<version>-installer.exe** file and follow the on-screen instructions in the Installation Wizard.
If you receive a **User Account Control** notice, choose **Yes**.
3. Specify the necessary [network settings](#)²⁸.

4. Make sure the Timeline has been installed correctly by performing a [health check on Timeline](#)¹⁸.

Please refer to the [Installing Timeline](#)¹² section for guidelines.

Step 3. Install ABBYY Recording Service and ABBYY Recorder

Install Recording Service and Recorder on target machines. Additionally, you need to establish the trust relationship between ABBYY Recording Service and ABBYY Timeline. Please refer to the **Recording Service Deployment Guide on Windows Systems** for detailed information on system requirements, deployment processes and workflows.

If you are not going to use the Task Mining feature, skip this step.

System Requirements and Prerequisites

Operating system	<p>Microsoft® Windows Server® 2019 Version 1809 (OS Build 17763.2565) or later</p> <p>Microsoft® Windows Server® 2022 Version 2009 (OS Build 20348.2031) or later</p>
CPU	4 cores or more
RAM	16 GB or more
HDD	<p>512 GB or more</p> <p>Depends on the actual amount of data loaded into the application. Production environment may require more disk space, depending on the actual volume of data loaded into the application.</p>
Browser (to access the ABBYY Timeline website)	<ul style="list-style-type: none"> • Google Chrome 118 or later • Microsoft Edge 118 or later
Additional software	<ul style="list-style-type: none"> • Microsoft Windows Subsystem Linux If this Windows feature is disabled, the ABBYY Timeline Setup will prompt you to enable it. After that, you will need to restart your computer to apply the changes. • Redis 6*^[11] Important. Do not preinstall Redis on your own, as Timeline distributes Redis within the installation process. For details, see Before you begin^[12]. • Microsoft .NET Framework 4.6.2*^[11] • PostgreSQL 13*^[11] • NodeJS 18.18.2*^[11] • Microsoft Visual c++ 2015-2019 Redistributables (x64)*^[11]

	<ul style="list-style-type: none"> • SMTP Server ABBYY Timeline needs access to a running SMTP server to be able to send verification emails, notifications, invitations, and alerts, etc.
Other requirements	<ul style="list-style-type: none"> • To install ABBYY Timeline on Windows successfully, make sure the user you are installing under is able to set the PowerShell Execution Policy to RemoteSigned. This user must also have assigned Log on as a service right in Local Security Policy. For details, see Installing Timeline¹³. • Obtain Twilio account You need to have a configured Twilio account if you want to enable SMS notifications feature in Timeline.

* included with the ABBYY Timeline installer.

Scaling guidelines

The exact calculation of necessary hardware requires multiple parameters such as data volume and usage patterns. However, the general guidelines could be defined as following:

- If the number of concurrent users is less than 10 and the data update frequency is once per day or less, a single server should be sufficient.
- For more users or more frequent data updates, a separate server for DBMS is recommended.

Installation, Removal and Upgrade

This section contains information about installing and removing ABBYY Timeline on-premises.

Important. The ABBYY Timeline installer does not have a repair mode. Please do not edit/delete anything in the installation folder unless you have received clear instructions on what to do. In case you deleted something from the installation directory by accident, you will have to uninstall, then re-install ABBYY Timeline.

Installing Timeline

Before you begin

1. Make sure your machine does NOT have Redis preinstalled.
Timeline distributes Redis within the installation process and expects to install Redis itself. This way we ensure that the proper version is used, and Redis is started whenever the machine restarts. If your computer has Redis preinstalled, you may want to run a new virtual machine to avoid issues during installation.
2. Setup Local Security Policy.
The user that installs Timeline should have an explicit **Log on as service** rights. Assign this right to the user in the **Local Security Policy** settings.
For more details, refer to Microsoft documentation - <https://learn.microsoft.com/en-us/system-center/scsm/enable-service-log-on-sm?view=sc-sm-2022#enable-service-log-on-through-a-local-group-policy>
3. Enable Windows Features
If the **Microsoft Windows Subsystem Linux** feature is disabled, the Timeline Setup will prompt you to enable it. After that, your computer will be restarted automatically. Please save your work before continuing the installation. After restarting, the Timeline installation will resume automatically. If it doesn't run automatically, please run the **ABBYY-Timeline-<version>-installer.exe** file again.
4. Log in as a Windows administrator or start Timeline Setup with **Run as Administrator**.
To perform all activities below, you must be a system administrator of the computer on which Timeline is being installed.

5. Ensure the **Execution Policy for PowerShell** is set to **RemoteSigned**. To verify the current settings for the execution policy:
 - a. Start Windows PowerShell with **Run as Administrator**.
 - b. Use **Set-ExecutionPolicy RemoteSigned** to set the policy to **RemoteSigned**.
If the command was executed without errors, go to the Timeline installation procedure by starting the Timeline installer with **Run as Administrator**.
If you get an access is denied error, you do not have the permissions to change the execution policy. Please contact your system administrator to have your permissions changed.

Interactive installation

Run the **ABBYY-Timeline-<version>-installer.exe** file, select the language to run the Installation Wizard and follow the on-screen instructions.

The Installation Wizard will display a sequence of pages with detailed instructions for each installation step. Use the **Back** and **Next** buttons to navigate the pages. To quit the Installation Wizard at any stage, click **Close**.

1. License Agreement

Read and accept the license agreement.

2. Installation Folder

Select a destination folder where Timeline will be installed.

The default folder is: C:\Program Files\ABBYY Timeline

3. Select Database

Timeline needs access to PostgreSQL. You can install PostgreSQL on a computer along with Timeline or a separate one.

If you already installed PostgreSQL on another computer, select **Connect to existing database**. This option is useful if you install the program in a production environment where the host machine is accessible from outside the corporate network. If you prefer to keep Timeline and the database on the same machine, select **Install local database**. This option is useful if you install the program for testing purposes.

Go to the next step to specify database connection settings.

4. Database Connection

Specify connection parameters to Timeline databases located on a local or remote PostgreSQL.

a. **Install local database**

If you selected this option, you need to configure access to a local PostgreSQL instance. To set up access to an existing PostgreSQL instance, go to step [5b below](#)¹⁴.

Using the options specified in this clause, Timeline Setup creates the following databases during the installation process:

timeline - the Admin database. It contains all information about users, their activity, and projects.

timeline-log - the Log database. It contains detailed records of Timeline events such as security, errors, and notifications.

timeline-000 - the User database. It contains information about user repositories.

i. **PostgreSQL user and PostgreSQL password**

Provide PostgreSQL superuser credentials. These will be used by the installation program to create a database user for Timeline.

ii. **PostgreSQL port**

Specify TCP/IP port for PostgreSQL. By default, TCP/IP port **5432** is used. Make sure that it is not being used by any other application. For more information, see the [Check TCP/IP Port Availability](#)²⁷ section.

iii. **Data directory**

Enter the path where the database needs to be installed.

The default path is: C:\Program Files\PostgreSQL\13

b. **Connect to existing database**

If you selected **Connect to existing database** in step 4, this means PostgreSQL is already installed on a remote or local server. To configure access to the Timeline databases, specify connection parameters for the Admin, Log, and User databases.

Important. This step requires the database admin user and databases created on your own in advance or configured for the previous installations.

i. **PostgreSQL user and PostgreSQL password**

Provide the credentials of the already existing admin PostgreSQL user who owns the Timeline databases.

ii. **PostgreSQL host**

Specify the server name where PostgreSQL is installed. By default, **localhost** is used.

iii. **PostgreSQL port**

Specify TCP/IP port for PostgreSQL. By default, TCP/IP port 5432 is used.

iv. **Database name**

A name must be given for each database:

timeline is the only valid name for the Admin database.

timeline-log or **timeline_log** is the only valid name for the Log database.

timeline-000 or **timeline_000** is the only valid name for the User database.

- v. Select **Use SSL for the database connection**, if your PostgreSQL is configured with SSL support.

If your PostgreSQL is configured with SSL support and a CA Root certificate file is used, provide the full path to the CA Root certificate file.

5. **Review Database Configuration**

If the Timeline databases already exist on the specified PostgreSQL server and the PostgreSQL version is supported, the **Review Database Configuration** step will open.

- a. Select **Connect to the existing Timeline database** if you want ABBYY Timeline to connect to the database that already has Timeline data from previous installations.
- b. Select **Reinstall Timeline database tables and user** if you have just created the database and it does not have an already-established connection with Timeline.
Important. The database admin user and databases must be created on your own in advance.

6. **Admin User Account**

Create a first admin user account for ABBYY Timeline. Enter a valid email address using an existing domain name that is configured to receive emails, for example, *user@domain.com*, and a password. This will be the first user and the one that will have access to the ABBYY Timeline website, where other users can be administered.

The password you specified must contain only English letters and digits from 0 to 9. It must be at least eight characters long, contain at least one uppercase letter, one lowercase letter, and one number.

Important. It is this user who will have a super admin role and have access to the Admin app. Once the installation is complete, you can log into the Admin app via the Timeline website.

7. **Mail Server Configuration**

Configure the SMTP server access to allow Timeline to send out emails in several features such as Alerting, User invitation, Email verification, etc. For example, during a user registration process, a verification email message is sent to the user. The user

won't be able to use Timeline until he completes the instructions contained in the message.

Provide general information to configure SMTP mail server and specify its security options. To decide which options you have to select, please refer to the documentation of your mail server. The server's basic settings are set during installation. You can change the SMTP Mail Server configuration after installation.

a. **Mail server host**

Enter server name where the SMTP mail server is installed.

b. **Mail server port**

Enter the SMTP mail server port number.

c. **Mail server username** and **Mail server password**

Enter the SMTP mail server access credentials. Keep these fields empty if your mail server requires no authentication.

d. **Email sender**

Enter the e-mail sender address used to fill the 'From' header field of e-mails.

e. **Mail server security**

Specify mail server security options. To decide which option you have to select, refer to the documentation of your mail server. Mail server basic settings are set during installation. You can change the SMTP Mail Server configuration after installation. For more information, see [How to Change SMTP Mail Server Configuration](#)²⁹.

- i. Select **Non secure** in case your SMTP server does not use TLS. This is a typical use case for mock, local mail services, for example, mailcatcher.
- ii. Select **Require TLS after connection** if the initial connection should happen over an unencrypted connection and then the STARTTLS command should be used to upgrade to a secure connection. For example, Microsoft Exchange.
- iii. Select **Secure from the start of the connection** then the app will use TLS to connect to the SMTP server from the start. It is the most secure option, however not all mail servers support this option.
- iv. Select **Allow self-signed certificate** if your mail server uses an unauthorized, e.g., self-signed, SSL certificate.

8. Timeline Base URL and Ports Configuration

- a. Enter the **Base URL** that hosts Timeline and via which users will be able to access the Timeline website.

Base URL must be a fully qualified URL. The lowercase pattern is recommended.

Do not use extra spaces and forward slash '/' at the end of the base URL. It should match the computer name on which you are installing Timeline and must be accessible both from the computer on which Recording Service is installed and from the administrator browser. It also is used for links inside email messages sent by the Timeline.

The Base URL must have the following syntax: `http[s]://hostname:port`

If you are using the default port (80 or 443), you do not need to add them to the base URL

Examples:

The base URL of the HTTP endpoint, if a custom port is specified:

`http://mytimeline.com:8080`

The base URL of the HTTPS endpoint, if a custom port is specified:

`https://mytimeline.com:30443`

- b. Specify TCP/IP port for the Timeline website.

By default, TCP/IP port 80 is used for the Timeline website. Make sure that it is not being used by any other website. For more information, see the [Check TCP/IP Port Availability](#)^[27] section. You can also [set a different port number later](#)^[28].

Select **Use HTTPS** if you want to secure data transferred, and then go to the next step to set the SSL connection settings.

Note. Currently, Timeline does not accept .pfx files. In case you have a .pfx file, you should convert it to .key and .cert files. The key and certificate files must be named **server.key** and **server.cert** since Timeline accepts only files with these names.

Important. If you install the program in a production environment, it is strongly recommended to use HTTPS and highly discouraged HTTP.

9. Service Setup

Current user account is used to run the **timelinepi** service. If the computer is a member of an Active Directory domain, the current domain user account will be set to run the service. If the computer is part of a workgroup, the local computer account will be set. For the service to work properly, specify the valid password for the user account used to install Timeline.

Important. It is prohibited to change the specified user account after the installation is completed.

10. SMS Sender

Important. This option is available only for online installation. In case the offline installation, do not configure parameters below.

Configure Twilio SMS service to receive SMS notifications from Timeline containing verification codes, alert notifications, and error messages. Twilio account is required to configure and send SMS notifications.

a. Account SID

This line contains a Twilio String Identifier (SID), a unique key that is used to identify your Twilio account.

b. Auth token

Enter your Auth token, generated for your Twilio account.

c. Phone number

Enter the phone number from your Twilio account. It will be the sender's number.

11. Create firewall exceptions after installation is complete

Installer does not create any software or hardware firewall exceptions. You must set up exception settings to allow interactions between components to take place inside a network. For example, you create inbound and outbound rules in Windows Firewall. For detailed information, see [Network Connection Settings](#)²⁷.

Performing health check

Check that Timeline is working properly by doing the following:

1. Open a browser and enter **{timelineURL}:{port}** in the address bar, where:
 - {TimelineUrl}** is the Base URL you specified during the Timeline installation or the public IP address or the full name of the computer on which Timeline is installed.
 - {port}** is a custom port assigned to Timeline website during the installation process. If you are using the default port (80 or 443), you do not need to add them to the **{timelineURL}**. By default, TCP/IP port 80 or 443 is used.

Example: *http://mytimeline:8080* or *https://mytimeline:30443*

2. If the installation was carried out correctly, the Timeline website will open.

3. Login using the Timeline admin credentials you specified in the ['Admin User Account' step](#) during the Timeline installation process.

Upgrading Timeline

If you own ABBYY Timeline 6.0 or later, you can upgrade to ABBYY Timeline 6.1.2. This means that you can install a new version of ABBYY Timeline and your databases will be maintained.

Before you begin

- Back up the Timeline database using PostgreSQL utilities.
The Timeline databases contain valuable data. These PostgreSQL databases should be backed up regularly. It is highly important to backup databases before upgrading the Timeline application. For detailed information, refer to <https://www.postgresql.org/docs/12/backup.html>.
- If you use the Task Mining feature, back up created projects.
Information pushed into Task Mining projects, including logs, is stored in the installation folder. To keep a backup of created projects, save the following folders with respective project IDs:
<Timeline installation folder>\storage\bundles\projects\<project_ID>
- Prepare enough storage space. Make sure the size of the free space on the target server is at least 3 times greater than your database size. The upgrade includes switching to PostgreSQL 13, that involves the local database migration.

Basic steps

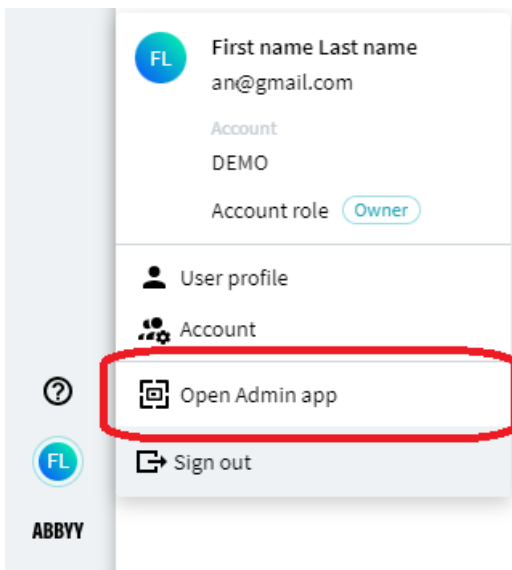
1. Run the **ABBYY-Timeline-6.1.*-installer.exe** file to start the Installation Wizard.
2. In the program dialog box, select **Update** and follow the instructions of the Installation Wizard.
Important. Upgrading within the same version is not supported.
3. After the update is complete, you may need to rebuild all old Task Mining projects so that they are available to work in Timeline 6.1.2.
For detailed instructions, see [How to Rebuild Existing Task Mining Projects](#).

If you can't upgrade ABBYY Timeline using the Setup, perform the following steps:

1. Uninstall your ABBYY Timeline.
You can keep configured databases during the uninstallation process by selecting the respective option in the installer dialog.
2. Run the **ABBYY-Timeline-6.1.*-installer.exe** file and follow the on-screen instructions in the Installation Wizard.
3. [Perform a health check](#)¹⁸.

How to Rebuild Existing Task Mining Projects

1. Open a browser and enter **{timelineURL}:{port}** in the address bar, where:
{timelineURL} is the Base URL you specified during the Timeline installation or the public IP address or the full name of the computer on which Timeline is installed.
{port} is a custom port assigned to Timeline website during the installation process. If you are using the default port (80 or 443), you do not need to add them to the **{timelineURL}**. By default, TCP/IP port 80 or 443 is used.
Example: *http://mytimeline:8080* or *https://mytimeline:30443*
2. Login using the Timeline admin credentials you specified in the ['Admin User Account' step](#)¹⁵ during the Timeline installation process.
3. Click your user avatar at the bottom of the left bar, then select **Open Admin app**.



4. In the **Admin app**, go to the **Project** tab and click **Rerun all task mining cutting**. **Important.** Do not refresh or close this browser page until the process is finished.

Uninstalling Timeline

1. Run the **ABBYY-Timeline-6.1.*-installer.exe** file to start the Installation Wizard.
2. In the program dialog box, click **Uninstall ABBYY Timeline**.
3. In the next dialog box specify whether you want to uninstall the product completely or maintain the databases for future use (e.g., if you choose to install a newer version).
 - If you want to remove the Timeline product completely, including the databases, select **Delete ABBYY Timeline database and data folder** and provide PostgreSQL superuser credentials.
 - If you want to uninstall the Timeline product while keeping the databases, proceed to the next step.
4. Click **Uninstall** to start the removal process.
While product removal is still in progress, you have the option of canceling it by clicking **Cancel**.
5. Once the product is removed from your system, click **Finish** to close the Installation Wizard.

About Timeline Licenses

When installing ABBYY Timeline, the license copies to the computer on which Timeline is being installed. Your license determines the Timeline subscription plan. You need to purchase a license update in order to add support for new features, extend the license period, the maximum number of users you can add to your Timeline account, or change other license parameters.

To get more information about subscription plans or purchase a license, contact your local ABBYY sales representative or submit a request to the ABBYY technical support service on this [page](#).

How to Update a License

1. Go to the computer on which Timeline is installed.
Note. To perform all activities below, you must be a system administrator of the computer.
2. Stop the **timelinepi** service using Services snap-in or open Command Prompt as administrator and use:

```
sc stop timelinepi
```
3. Go to the Timeline installation folder and open the **license** folder.
The default is C:\Program Files\ABBYY Timeline\license
4. Back up existing **timelinepi.lic** file.
5. Replace the **timelinepi.lic** file with the new one.
6. Start the **timelinepi** service using Services snap-in or run Command Prompt as administrator and use:

```
sc start timelinepi
```

Additional Configurations

This section provides supplementary instructions for configuring ABBYY Timeline.

Using HTTPS

You can use HTTPS to secure data transferred between the application components and the client's browser.


To configure HTTPS, you need SSL certificates. You can choose one of the following options:

1. Use SSL certificate issued by the Certification Authority (CA).
This is the recommended approach for the application installation that is intended for a production environment. The connection to the server will be secure and users will not get any warnings from the browser.
2. Use a self-signed SSL certificate.
If you do not have a signed certificate or if you only require a certificate for testing purposes, use a self-signed SSL certificate. However, in this case users will get warnings from the web browser about the use of a self-signed certificate as the server will not be considered secure.

If you install the program in a production environment, it is strongly recommended to use HTTPS with a CA certificate and a highly discouraged HTTP or self-signed SSL certificate.

Basic steps

1. Obtain an SSL certificate.
2. Extract the certificate and keys from a .pfx file.
Currently, Timeline does not accept .pfx files. You must extract the **.cert** and **.key** files from the .pfx file, so that the certificate and the key files are available separately.
For more information see [How to extract .cert and .key files from the .pfx](#) ²⁴.
3. Set up HTTPS.
You can enable SSL and configure HTTPS on one of the following stages:
 - During the Timeline installation process
For more information see [How to Set Up HTTPS During Installation](#) ²⁵.

- After the Timeline installation is completed.
For more information see [How to Switch from HTTP to HTTPS Without Reinstalling](#) 

How to extract .cert and .key files from .pfx

Prerequisites. Ensure OpenSSL is installed in the server that contains the SSL certificate.

Important. Name your private key and certificate files as **server.key** and **server.cert** respectively. The key and certificate files must be named **server.key** and **server.cert** since Timeline accepts only files with these names.

1. Start OpenSSL from the **OpenSSL\bin** folder.
2. Open the command prompt and go to the folder that contains your .pfx file.
3. Run the following command to extract the private key:

```
openssl pkcs12 -in [yourfile.pfx] -nocerts -out [keyfile-encrypted.key]
```

You will be prompted to type the import password. Type the password that you used to protect your keypair when you created the .pfx file. You will be prompted again to provide a new password to protect the .key file that you are creating. Store the password to your key file in a secure place to avoid misuse.

4. Run the following command to extract the certificate:

```
openssl pkcs12 -in [yourfile.pfx] -clcerts -nokeys -out [certificate.cert]
```

5. Run the following command to decrypt the private key:

```
openssl rsa -in [keyfile-encrypted.key] -out [keyfile-decrypted.key]
```

6. Type the password that you created to protect the private key file in the previous step.
7. The .cert file and the decrypted and encrypted .key files are available in the path, where you started OpenSSL.
8. Rename your **.cert** and **.key** files to **server.cert** and **server.key** as Timeline only accepts files with these names.

How to Set Up HTTPS During Installation

1. Run the **ABBYY-Timeline-6.1.*-installer.exe** file and follow the on-screen instructions in the Installation Wizard. For more information see [Installing Timeline](#)¹².
2. Enable SSL between the remote PostgreSQL instance and application in the '[Database connection](#)' step¹⁴.
 If your remote PostgreSQL is configured with SSL support:
 - a. Choose **Use SSL for the database connection**.
 - b. Provide a path to your database SSL certificate.
 If your PostgreSQL is configured with SSL support and a CA root certificate file is used, choose **Use CA Root certificate file** and provide the full path to your root certificates for each remote database.
3. Enable SSL between application and client in the **Timeline Base URL and Ports Configuration** step:
 - a. Specify TCP/IP port for the Timeline website. For example, 443.
 - b. Choose **Use HTTPS**.
 - c. Provide paths to **server.cert**, **server.key**, and the password (if presented) files.
4. Setup a network connection for Timeline. For more information see [Network Connection Settings](#)²⁸.
 - a. In Windows Firewall, open the rules for inbound Timeline connections.
 - b. Add a TCP/IP port specified during the installation process to the exception list. For example, 443 port.
5. Check whether HTTPS is functioning properly
 Open a browser on any computer and enter **{TimelineUrl}:{port}** in the address bar, where:
 - **{TimelineUrl}** is the [Base URL you specified during the Timeline installation](#)¹⁶ or the public IP address or the full name of the computer where Timeline is installed.

- **{port}** is the custom port assigned to the Timeline website during the installation process. If you are using the default port (80 or 443), you do not need to add them to the **{timelineURL}**. By default, TCP/IP port 80 or 443 is used.

Example: *https://mytimeline:30443*

How to Switch from HTTP to HTTPS Without Reinstalling

If you did not configure HTTPS when installing Timeline, you can do it later without reinstalling Timeline. To do this:

1. Go to the computer on which Timeline is installed.

Note. To perform all activities below, you must be a system administrator of the computer.
2. Stop the **timelinepi** service using **Services** snap-in or open **Command Prompt** as administrator and use:


```
sc stop timelinepi
```
3. Open the Timeline installation folder and copy the **server.cert** and **server.key** to **ssl** subfolder.
4. By default, the Timeline website uses 443 TCP/IP port when using HTTPS. You can reassign port numbers. For more information see [Set a Different Website Base URL and Port Number for Timeline](#)²⁸. Then you need to make changes to the appropriate Windows Firewall rules or to the settings of any other firewall that you are using.
5. Make sure the HTTPS protocol is specified in the `BASE_URL` variable in the **TimelinePI.xml** configuration file. Update `base_url` with a port number in case of the custom port.

Example: `BASE_URL=https://mytimeline.com:30443`
6. Start the **timelinepi** service using **Services** snap-in or run **Command Prompt** as administrator and use:


```
sc start timelinepi
```
7. [Perform a health check](#)¹⁸.

Check TCP/IP Port Availability

If the Timeline website does not open after the installation is complete, the problem may occur due to the busy TCP/IP port specified during installation.

To find open ports on a computer and to check what is using specified port, use **netstat** command line. Open the **Command Prompt (Start > Run > cmd)** and use **netstat -ano | find /i "<port_number>"**. It will show you all processes that use specified port. Notice the PID (process id) in the right column:

- **-a**
Displays all active connections and the TCP and UDP ports on which the computer is listening on.
- **-n**
Displays active TCP connections and port numbers in numerical form.
If you want to free the port, go to **Task Manager**, sort by PID and close those processes.
- **-o**
Displays active TCP connections and includes the process ID (PID) for each connection.

Network Connection Settings

The table below lists the ports that are used by default to access Timeline components or for interaction between components. If you are using a software or hardware firewall, make sure that the exception settings for Timeline and Recording Service have been set up accordingly on the computer where they installed.

If you reassign port numbers, you will need to make changes to the appropriate Windows Firewall rules or to the settings of any other firewall that you are using.

Timeline setup does not create any software or hardware firewall exceptions. You must set up exception settings to allow interactions between components to take place inside a network. For example, you create inbound and outbound rules in Windows Firewall. The table below contains information about the ports that Timeline listens on.

Component name	Protocol type	Port	Traffic direction	Use
Timeline	TCP/IP	80 or the port used during the installation (if use HTTP) 443 or the port used during the installation (if use HTTPS)	Inbound	HTTP or HTTPS connections to the Timeline website.
PostgreSQL	TCP/IP	5432	Inbound	Connections to the PostgreSQL database server from the remote computer where the Timeline is hosted.

Set a Different Website Base URL and Port Number

The port number used by the Timeline website is specified during the Timeline installation. By default, TCP/IP port 80 or 443 is used for the Timeline website. You can change the port number later using **TimelinePI.xml** configuration file:

1. Go to the computer where Timeline is installed.
Note. To perform all activities below, you must be a system administrator of the computer on which Timeline is installed.

2. Stop the **timelinepi** service using **Services** snap-in or open **Command Prompt** as administrator and use:

```
sc stop timelinepi
```

To ensure the correct operation of Timeline, you need to stop **timelinepi** service prior to changing the Timeline configuration file.

3. Open **Command Line** and use **netstat -a** to get a list of ports and choose an available port.
4. Go to the Timeline installation folder and open **TimelinePI.xml** file using text editor. By default, the program is installed into C:\Program Files\ABBYY Timeline
5. In the **TimelinePI.xml** configuration file:

- a. Find the line contains **PROXY_PORT** and change the value.

e.g.: `<env name="PROXY_PORT" value="8080"/>`

If you use a HTTPS port, change the value for the **PROXY_SSL_PORT** option.

e.g.: `<env name="PROXY_SSL_PORT" value="30443"/>`

- b. Find the line contains **BASE_URL** and add or change the port in the value.

e.g.:

`<env name="BASE_URL" value="https://mytimeline.com:8080"/>`

or

`<env name="BASE_URL" value="http://mytimeline.com:30443"/>`

If you are using the default port (80 or 443), you do not need to add them to the URL. By default, TCP/IP port 80 or 443 is used.

6. Save the **TimelinePI.xml** file.
7. Start the **timelinepi** service using **Services** snap-in or run **Command Prompt** as administrator and use:

```
sc start timelinepi
```

Important. If you reassign port numbers, you will need to make changes to the appropriate Windows Firewall rules or to the settings of any other firewall that you are using. Also, you will need to make changes to **BASE_URL**.

How to Change SMTP Mail Server Configuration

SMTP mail server is configured during the [Timeline installation](#)¹⁵. You can change your mail server settings later using **TimelinePI.xml** configuration file.

To change mail server configuration, perform the following actions:

1. Go to the computer where Timeline is installed.

Note. To perform all activities below, you must be a system administrator of the computer.

2. Stop the **timelinepi** service using **Services** snap-in or open **Command Prompt** as administrator and use:

```
sc stop timelinepi
```

To ensure the correct operation of Timeline, you need to stop **timelinepi** service prior to changing the Timeline configuration file.

3. Go to the folder where Timeline is installed and open **TimelinePI.xml** using any text editor.

By default, Timeline is installed into C:\Program Files\ABBYY Timeline

4. In the **TimelinePI.xml** configuration file, find the following lines and change their values:

- a. `<env name="MAIL_SERVER_HOST" value=""/>`

This line contains the host of the SMTP mail server, enter the address in the value.

e.g.: `<env name="MAIL_SERVER_HOST" value="example.smtp.com"/>`

- b. `<env name="MAIL_SERVER_PORT" value=""/>`

This line contains the port of the SMTP mail server, enter the port in the value.

e.g.: `<env name="MAIL_SERVER_PORT" value="465"/>`

- c. This line contains the user that will be used to authenticate with the SMTP mail server, enter the username in the value. Keep this value empty if your mail server requires no authentication.

```
<env name="MAIL_SERVER_USERNAME" value=""/>
```

e.g.: `<env name="MAIL_SERVER_USERNAME" value="example_user"/>`

- d. `<env name="MAIL_SERVER_PASSWORD" value=""/>`

This line contains the password of the user that will be used to authenticate with the mail server, enter the password in the value. Keep this value empty if your mail server requires no authentication.

e.g.: `<env name="MAIL_SERVER_PASSWORD" value="example_password"/>`

- e. `<env name="MAIL_SERVER_SECURE" value="FALSE"/>`

This line contains the option whether to use TLS from the start of the connection. If you want TLS from the start it should be **TRUE** otherwise it should be **FALSE**.

Note. It is recommended Timeline and the Exchange server use the same TLS settings

f. `<env name="MAIL_SERVER_REQUIRE_TLS" value="FALSE"/>`

This line contains the option specifies whether the connection should be established on an unencrypted channel, then upgrade to a secure connection with a STARTTLS command. If so, specify **TRUE** otherwise **FALSE**.

g. `<env name="MAIL_SERVER_REJECT_UNAUTHORIZED" value="TRUE"/>`

This line contains the option to reject unauthorized certificates, for example, self-signed certificates. In that case, it should be **TRUE**. If you want to use a self-signed certificate specify **FALSE**.

h. `<env name="EMAIL_SENDER" value="noreply@example.com"/>`

This line contains the email sender address used to fill the 'From' header field of e-mails.

5. Save the **TimelinePI.xml** file.

6. Start the **timelinepi** service using **Services** snap-in or run **Command Prompt** as administrator and use:

```
sc start timelinepi
```

How to Configure Twilio SMS Service to Receive SMS Notifications

Twilio SMS Service is configured during the [Timeline installation](#)¹⁸. This feature allows Timeline to send SMS notifications containing verification codes, alert notifications, and error messages.

You can change the specified configuration later using **TimelinePI.xml** file. To change Twilio SMS service configuration, perform the following actions:

1. Go to the computer where Timeline is installed.

Note. To perform all activities below, you must be a system administrator of the computer.

2. Stop the **timelinepi** service using **Services** snap-in or open **Command Prompt** as administrator and use:

```
sc stop timelinepi
```

To ensure the correct operation of Timeline, you need to stop **timelinepi** service prior to changing the Timeline configuration file.

3. Go to the folder where Timeline is installed and open **TimelinePI.xml** using any text editor.

By default, Timeline is installed into C:\Program Files\ABBY Timeline

4. In the **TimelinePI.xml** configuration file, find the following lines and change their values:

a. `<env name="TWILIO_ACCOUNT_SID" value="" />`

This line contains a Twilio String Identifier (SID), a unique key that is used to identify your Twilio account

e.g.: `<env name="TWILIO_ACCOUNT_SID" value="AC3f84d59206412725a03114dfb5163e33" />`

b. `<env name="TWILIO_AUTH_TOKEN" value="" />`

This line contains an access token that Timeline needs to connect to your **Twilio** account.

e.g.: `<env name="TWILIO_AUTH_TOKEN" value="ae356b78c7ch1293h123n2afe6a9" />`

c. `<env name="TWILIO_PHONE_NUMBER" value="" />`

This line contains the phone number from which SMS notifications are sent.

e.g.: `<env name="TWILIO_PHONE_NUMBER" value="+121313141516" />`

5. Save the **TimelinePI.xml** file.

6. Start the **timelinepi** service using **Services** snap-in or run **Command Prompt** as administrator and use:

```
sc start timelinepi
```

Background Upload of Zipped CSV Files to Timeline

The Timeline background-upload feature involves a folder that is monitored for files copied there. Whenever a new zip file is detected in that folder, the application grabs it and interprets it as an uploaded archive. The folder is defined as STORAGE\sftp, where STORAGE variable in the **TimelinePI.xml** configuration file.

The upload file can be copied to the specified folder by any means. It can be the target of an SFTP upload, or it can be an otherwise shared folder.

Important. Use **Deflate** compression method when zipping CSV files. Otherwise, ZIP files upload will fail. Please use archiving software that supports this method of compression. For example, you can use 7Zip or PeaZip instead of the standard Windows archiver.

For details on configuring background upload, see [Timeline User's Guide > Scheduled File Upload via SFTP](#).

Troubleshooting

After successful Timeline installation the `timelinepi` service is stuck in an endless cycle of restarts

Symptoms

- Timeline was installed successfully but the application is not working, and your machine seems to freeze. Also, CPU is loaded up to 100%.
- In **Task Manager > Services**, `timelinepi` service is stuck in an infinite cycle of changing **Starting/Stopped** statuses. At the same time, `redis-wsl` service has the **Stopped** status. If you try to start the `redis-wsl` service manually you get an error message.
- When opening `\Users\<username>\AppData\Local\Temp\redis-wsl` in the `Redis.err` file you can find an error message `'The file cannot be accessed by the system'`.

Cause

This behavior can be caused by the WSL known issue: <https://learn.microsoft.com/en-us/windows/wsl/store-release-notes#known-issues>

Workaround

The steps below will help you to resolve the WSL issue:

1. Manually stop the `timelinepi` service in **Task Manager > Services**.
2. Open command line and execute the following:

```
wsl --update
```
3. In **Task Manager > Services** manually start `redis-wsl` and then `timelinepi` services.

Timeline installation failed on Redis step

This could happen if you have Redis preinstalled on your computer. It may cause conflicts while installing Timeline. Timeline distributes Redis within the installation process and expects to install Redis itself.


To solve the issue, run a new virtual machine without Redis and perform Timeline installation there.

Technical Support

Should you have any questions regarding the use of ABBYY Timeline, first of all, consult the documentation provided with this product (this Help). Useful information can also be found in the technical support section of the ABBYY Web site at support.abby.com.

If you cannot find the answer to your question, submit a request to the ABBYY Technical Support service on this [page](#). Please provide the following information when contacting technical support:

General information

- Your first and last name
- The name of your organization
- Your phone number (or fax, or e-mail)
- Your Timeline installation: On-Premises or Cloud
- The version of your operating system
- The version and build number
 - on the Timeline website click  at the bottom of the left bar and then select **About**
 - on the Recording Service website click **About** at the bottom left of the window
- A description of the problem and the full text of the error message (if there was any)
- You may also wish to provide any additional information you consider important

Logs

The installation process generates a set of log files for the Timeline, Recording Service, and Recorder installations. You can use these files to verify that you installed applications successfully, or to troubleshoot your installation. You can also package these files so that they can be sent to ABBYY Technical Support for problem diagnosis. See below for the information on the location of the log files and how to collect them.

Timeline

To find logs go to the computer where Timeline is installed. You will find the log files in the following directories, depending on the OS involved:

- **Windows**

%temp%\ABBYY_Timeline_YYYYMMDD<file number>.log

- **Linux**

/opt/timeline/logs

Recording Service and Recorder

To find logs go to the computer where Recording Service or Recorder are installed. Use the Trace Collector application to gather the most recent log files automatically. To do it, follow the steps below:

1. Open the application, depending on the module you want the logs to be collected for:
 - a. **Recording Service**
Launch Trace Collector from the application folder. By default - **C:\inetpub\ABBYY Recording Service\Abbyy.RecordingService.TraceCollector.exe**
 - b. **Recorder**
Start Trace Collector from tray
OR
Launch it from the application folder. By default - **C:\Program Files\ABBYY Recorder\Abbyy.Recorder.TraceCollector.exe**
2. Click the **About** button.
3. Select **Diagnostic Report** in the appeared dialog.
4. In the opened application window, you will see the latest logs selected by default. No additional actions are needed.
5. Click the **Save as** button, then select the path for the resulting archive.
6. Send the archive to our support team with your request.

If for some reason you need to access the log directories manually, by default they are located in the following folders (Windows only):

- **Recorder**

C:\Users\%username%\AppData\Roaming\ABBYY\Recorder\Logs

- **Recording Service**

C:\inetpub\ABBYY Recording Service\logs