



# **Installing BankID Security Application in corporate environments**

*Version: 3.1.0*

*Date: 2021-10-25*

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# 1 Introduction

## 1.1 Version history

*Document version 3.1.0 2021-10-25:*

Changed IP address to vks.bankid.com.  
General cleansing/removal of outdated info  
Updated info about bugs, section 11.4

*Document version 3.0.9 2020-09-23:*

Replaced dead link to repository for install file.

*Document version 3.0.8 2020-08-06:*

Updated info about cardreaders. Updated system requirements. Info about bug in version 7.9.1/7.9.101.

*Document version 3.0.7 2019-05-09:*

Added information about mexx.bankid.com.

## 1.2 General:

This document describes the BankID Security Application (the BankID program) for Windows in a scenario where the software is to be installed in a corporate environment. The document is mainly intended for staff that is responsible for or affected by:

- Packaging of software before installation
- Software installation on workstations
- Configuration of local or central proxies and/or firewalls

**Note that the BankID Security Application has a function for automatic version control which, if not allowed to work as intended, may cause the software to stop working. Please see section 5 for more information.**

**BankID Security Application includes features which enable the program to communicate with the BankID server. This is described in section 6.**

There is an option to sign up for the send list for BankID technical information, on <https://www.bankid.com/utvecklare/guider>.

## 2 General description

BankID is the leading national electronic ID in Sweden, currently accepted for identification and signing in hundreds of services in Sweden including some of the Swedish bank's online banking services.

Also, the same infrastructure is used with bank unique electronic IDs for authentication and signing in several European online banking services. These electronic IDs are also covered when the term “BankID” is used in this document.

The BankID Security Application (BankID program) is needed by the user for downloading, using and managing the electronic IDs. The BankID program is used both for electronic IDs on file and Electronic IDs on card.

BankID Security Application is available in the following formats:

- The standard variant in an EXE package that can be downloaded from <https://install.bankid.com>
- The enterprise (corporate) variant in an MSI package that can be downloaded from <https://www.bankid.com/foretag/enterprise>

The BankID program is installed system wide, which means that when the BankID program has been installed on a computer, all users with an account on the computer will have access to the BankID program. A number of files are stored centrally and when a user logs in for the first time after installation, a number of files are stored in the user's home directory.

A function in the BankID program, called automatic version control, helps to ensure that the currently installed BankID program is an accepted version. This control is important for several reasons, not least from a security point of view. A version of the BankID program that is not accepted is regarded as blocked and authentication and signing transactions created by such an installation will be rejected.

When the BankID program is uninstalled, user-specific files are left on the computer. This includes user settings and any BankID on file. All user-specific information is stored in a separate directory in the user's home directory.

### **3 BankID Security Application – install package**

There are two variants of BankID Security Application that differs slightly in functionality and have different installation procedures:

- The standard variant which is installed from an EXE file, is suited for home users and business with a small number of computers. This variant has functionality for automatic updates.
- The enterprise variant which is installed from an MSI package, is suited for corporations that need to distribute BankID Security Application to a large number of users, in a standardized manner and with distribution tools. This variant doesn't have the auto-update functionality, making it necessary for the system administrator to keep track of the version and update as necessary. The enterprise variant has the text “Enterprise” after the version number in the dialogue “About BankID security application”.

### 3.1 Standard variant – EXE file

URL to the install file in EXE format:

<https://install.bankid.com/filedownloader?fileId=Win>

The file name is *BankID\_installation\_x\_y\_z.exe* (x\_y\_z is replaced with the current version).

The shortcut that is added to the Start menu/screen and on the Desktop by the installation will show the application name on the language that the system is running at the time of installation, disregarding if the application language later is changed. To control which language that is used for the shortcut (and by the installation guide), the `/L<LocaleID>` switch can be used.

("BankID\_installation\_x\_y\_z.exe/L1053" for Swedish). Please note however that this doesn't affect the language for the BankID programs's GUI or help system. These language codes can be used:

*Swedish: 1053*  
*English: 1033 eller 2057*  
*Danish: 1030*  
*Estonian: 1061*  
*Finnish: 1035*  
*French: 1036*  
*Dutch: 1043*  
*Latvian 1062*  
*Lithuanian 1063*  
*Norwegian: 1044*  
*Polish: 1045*

### 3.2 Enterprise variant – MSI package

Administrators who need an MSI package for installations through Microsoft Software Installer or similar, can download an MSI package, "BankID.msi", from <https://www.bankid.com/foretag/enterprise> (The MSI package resides in a zip file).

The MSI package can handle switches that are supported by Microsoft Software Installer. Two useful switches are:

`/quiet` - Quiet mode, nothing is displayed to the user.

`/passive` - Unattended mode – Progress indicator only (no confirmation or finishing dialogs are displayed).

## 4 Installing, updating and uninstalling

### 4.1.1 Installation

Administrator privileges are required to install the BankID Security Application.

A shortcut to the application (the binary is named *BankID.exe* and resides in `%PROGRAMFILES%\BankID`) is placed in the common user program folder in the Start menu and on the Desktop. The first time a user logs in; a user specific folder will be created under `%APPDATA%\BankID\`.

Plug-ins or ActiveX components are no longer installed.

### 4.1.2 Uninstallation

The easiest way to uninstall the BankID program is through the operating system's dedicated software management tool (e.g. Settings - Apps in Windows 10).

The information saved under `%APPDATA%\BankID` will be left after uninstallation since this makes updating easier. This information also includes any BankID on file that the user has collected.

Some settings are stored in `%APPDATA%\BankID\Config`. The file `BispPersistent` should normally not be deleted manually. If this file is deleted, some of the BankID on file that the user may have in the computer will stop working.

There is a tool available for manual complete uninstallation (user controlled), which can be used in the event that the normal uninstallation fails. s available at <https://support.bankid.com/fixa>.

### 4.1.3 Updating

If an older version exists, the installer will update that version to the latest one. It is not possible to downgrade from a later to an earlier version. In that case the installed version must be manually uninstalled before the older version can be installed.

When updating, uninstallation of the older version is first performed, followed by installation of the new version. If all files cannot be removed during uninstallation it may be necessary to reboot. In this case the information is stored in the Registry under `HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\RunOnce\` to ensure that the update continues after reboot.

So called "Minor Upgrades" should work with the MSI package.

When running into problems with "Minor updates", there is a possible workaround by setting `REINSTALL` to `ALL` and `REINSTALLMODE` to `vomus`. There's more info on <https://docs.microsoft.com/sv-se/windows/win32/msi/applying-small-updates-by-reinstalling-the-product>.

## 4.2 Technical information

Files and/or directories are created in the following locations in the directory structure:

`%PROGRAMFILES%\BankID`

`%APPDATA%\BankID` (per user)

Keys and/or values are created in the following locations in the Registry. Values containing "Wow6432Node" are valid for 64 bit Windows only. `HKEY_CLASSES_ROOT\bankid` (URL-schema för bankid://)

`HKEY_LOCAL_MACHINE\SOFTWARE\Classes\bankid` (URL-schema för bankid://)

*HKEY\_CLASSES\_ROOT\AppID\{DC5B2225-D734-40C7-91D8-D20083B9114D}\{8644749E-59D1-4B93-B559-356FE27DD80B}*

*HKEY\_LOCAL\_MACHINE\SOFTWARE\Microsoft\Internet Explorer\ProtocolExecute\bankid*

In 64-bits Windows also:

*HKEY\_LOCAL\_MACHINE\SOFTWARE\Wow6432Node\Microsoft\Internet Explorer\ProtocolExecute\bankid*

*HKEY\_CLASSES\_ROOT\Installer\Features\9F7552B430C87EB49948D45E52705608*

*HKEY\_CLASSES\_ROOT\Installer\Products\9F7552B430C87EB49948D45E52705608*

*HKEY\_LOCAL\_MACHINE\SOFTWARE\Classes\Installer\Features\9F7552B430C87EB49948D45E52705608*

*HKEY\_LOCAL\_MACHINE\SOFTWARE\Classes\Installer\Products\9F7552B430C87EB49948D45E52705608*

*HKEY\_LOCAL\_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Uninstall\{4B2557F9-8C03-4BE7-9984-4DE525076580}*

In 64-bits Windows instead:

*HKEY\_LOCAL\_MACHINE\SOFTWARE\Wow6432Node\Microsoft\Windows\CurrentVersion\Uninstall\{4B2557F9-8C03-4BE7-9984-4DE525076580}*

*HKEY\_CURRENT\_USER\Software\Microsoft\Windows\CurrentVersion\UFH\SHC*

*HKEY\_CLASSES\_ROOT\TypeLib\{417939E1-4735-4571-8199-D0A2680CEA58}*

*HKEY\_CLASSES\_ROOT\TypeLib\{BF962FCA-EC9A-4246-8AD7-D8114776520A}*

*HKEY\_CLASSES\_ROOT\Wow6432Node\TypeLib\{417939E1-4735-4571-8199-D0A2680CEA58}*

*HKEY\_CLASSES\_ROOT\Wow6432Node\TypeLib\{BF962FCA-EC9A-4246-8AD7-D8114776520A}*

*HKEY\_LOCAL\_MACHINE\SOFTWARE\Classes\Wow6432Node\TypeLib\{417939E1-4735-4571-8199-D0A2680CEA58}*

*HKEY\_LOCAL\_MACHINE\SOFTWARE\Classes\Wow6432Node\TypeLib\{BF962FCA-EC9A-4246-8AD7-D8114776520A}*

*HKEY\_LOCAL\_MACHINE\SOFTWARE\Classes\TypeLib\{417939E1-4735-4571-8199-D0A2680CEA58}*

*HKEY\_LOCAL\_MACHINE\SOFTWARE\Classes\TypeLib\{BF962FCA-EC9A-4246-8AD7-D8114776520A}*

*HKEY\_LOCAL\_MACHINE\SOFTWARE\Wow6432Node\Classes\TypeLib\{417939E1-4735-4571-8199-D0A2680CEA58}*

*HKEY\_LOCAL\_MACHINE\SOFTWARE\Wow6432Node\Classes\TypeLib\{BF962FCA-EC9A-4246-8AD7-D8114776520A}*

*HKEY\_LOCAL\_MACHINE\SOFTWARE\Classes\Wow6432Node\CLSID\{1EADCC29-35BA-4C5F-91A1-09037CF4DBC2}*

*HKEY\_LOCAL\_MACHINE\SOFTWARE\Wow6432Node\Classes\CLSID\{1EADCC29-35BA-4C5F-91A1-09037CF4DBC2}*

*HKEY\_CLASSES\_ROOT\CLSID\{1EADCC29-35BA-4C5F-91A1-09037CF4DBC2}*

In 64-bits Windows instead:

*HKEY\_CLASSES\_ROOT\Wow6432Node\CLSID\{1EADCC29-35BA-4C5F-91A1-09037CF4DBC2}*

*HKEY\_LOCAL\_MACHINE\SOFTWARE\Microsoft\Internet Explorer\Low Rights\ElevationPolicy\{2749F499-8D6F-4ED7-A697-46D40342051D}*

*HKEY\_LOCAL\_MACHINE\SOFTWARE\Microsoft\Internet Explorer\Low Rights\ElevationPolicy\{541890BF-F2B3-4A0E-AC2A-BFBED110AB43}*

In 64-bits Windows also:

*HKEY\_LOCAL\_MACHINE\SOFTWARE\Wow6432Node\Microsoft\Internet Explorer\Low Rights\ElevationPolicy\{2749F499-8D6F-4ED7-A697-46D40342051D}*

*HKEY\_LOCAL\_MACHINE\SOFTWARE\Wow6432Node\Microsoft\Internet Explorer\Low Rights\ElevationPolicy\{541890BF-F2B3-4A0E-AC2A-BFBED110AB43}*

*HKEY\_CLASSES\_ROOT\AppID\{DC5B2225-D734-40C7-91D8-D20083B9114D}\{8644749E-59D1-4B93-B559-356FE27DD80B}*

To prevent Windows from trying to install “Minidrivers” for cards, values are added for all cards that are used by BankID Security Application:

*HKEY\_LOCAL\_MACHINE\SOFTWARE\Microsoft\Cryptography\Calais\SmartCards\zBankID - \**

*HKEY\_LOCAL\_MACHINE\SOFTWARE\Wow6432Node\Microsoft\Cryptography\Calais\SmartCards\zBankID - \**

(“zBankID” improves the compatibility with other products.)

Temporarily as needed after update:

*HKEY\_CURRENT\_USER\Software\Microsoft\Windows\CurrentVersion\RunOnce\*

Windows Installer adds a number of keys that aren’t mentioned above for administration of installation and update, for example:

*HKEY\_LOCAL\_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Installer\UserData\...*

*HKEY\_LOCAL\_MACHINE\SOFTWARE\BankID\BankID Security Application*

In 64-bits Windows instead:

*HKEY\_LOCAL\_MACHINE\SOFTWARE\Wow6432Node\BankID\BankID Security Application*

## 5 Automatic version control

For several reasons, it is important that users of BankID do not use versions of the BankID Security Application that are no longer considered to be functional or reliable from a security point of view. It is therefore necessary that the BankID Security Application is verified on a regular basis so it can be updated when required.

To verify the current installation there is a function in BankID Security Application called automatic version control, which regularly checks the software version against an Internet based Version Control Server (VKS). The VKS response states whether the installed BankID program is accepted or blocked.



If these version control queries are consistently blocked, the BankID program will automatically obtain the blocked status within approx. one month, and further transactions for authentication and/or signing will lead to a dialog stating that the program needs to be updated.

**If an installation of BankID Security Application cannot make version control queries, it will act as though it is blocked.**

***The following apply for the standard variant of BankID Security Application, the EXE package:***

A specific version of the BankID Security Application can be accepted, in phase-out, or blocked. When a version is being phased out, the user is informed that a more recent version is available. In some conditions the BankID program will download and start installing the new version, and in other conditions it will suggest the user to manually update.

If the user is suggested to update, and follows the suggestion, the user's web browser will start and open <https://install.bankid.com>. From the website the user can download and install the latest version.

***The following apply for both the standard variant of BankID Security Application, the EXE package, and the Enterprise variant, the MSI package:***

Under certain circumstances a specific version of the BankID Security Application will need to be blocked for example for security-related reasons. An installation of the BankID Security Application obtains the blocked status if it receives information that it is blocked from the VKS at a version control operation, or if it is consistently prevented from performing version control.

A blocked version displays a dialog stating that the program needs to be updated, and transaction traffic to the BankID server is rejected.

Note: The user will not need to download a new BankID because of this. It is only the software that is blocked, not the user's BankID.

## **5.1 Technical description**

The BankID Security Application makes the first version control request in conjunction with installation. After this the request is normally made every 14 days provided that the BankID program is running. If a version control request should have been issued while the program wasn't running, the request is issued as soon as the program starts.

***The following apply for the standard variant of BankID Security Application, the EXE package:***

If the response to a version control request is that a newer version is available and the user responds "remind me later" to the updating offer, the next version control request will be made the following day.

If the answer is that the BankID program should automatically download and update, the BankID program will initiate file download (silently) via https from install.bankid.com. When the file is downloaded, the BankID program will display a message that update will take place. When the user confirms the dialogue, update will take place. The user can continue using BankID as soon as the update is finished. If the download or the installation fails, the BankID program will retry again five times, with several hours between each try. If the update still fails, the BankID program will display the dialogue that suggests the user to manually update the BankID program.

**The following apply for both the standard variant of BankID Security Application, the EXE package, and the Enterprise variant, the MSI package:**

BankID Security Application starts automatically when called up, for example in connection with authentication with BankID against a relying party, or when the user starts the program manually.

If a version control request is due at an automatic program start, the BankID program awaits the response from the version control, before the requested action is performed.

### 5.1.1 Content of version control request

A version control request consists of one or two HTTPS requests on port 443 to a version control server (VKS) on the internet

vks.bankid.com

(IP address **141.226.253.92**) (New from november 2021)

Both the https request and the response consist of XML structures as shown in the examples below.

#### Example of request

```
Accept: [*/]*
Accept-Encoding: [gzip, deflate, br]
Accept-Language: [sv-se]
Content-Length: [220]
Content-Type: [ application/xml; charset=utf-8]
User-Agent: [BankIDSecurityProgram]
<?xml version="1.0">
  <autoUpdateRequest>
    [REQUESTCONTENT]
  </autoUpdateRequest>
```

In the above example the following variables have been used:

[REQUESTCONTENT]: This content comprises a number of XML elements and/or Base64 encoded data.

#### Example of response

```
Cache-Control => [no-cache, no-store, no-transform, must-revalidate, private, max-age=0]
Expires => [Thu, 01 Jan 1970 01:00:00 CET]
Pragma => [no-cache]
X-Accel-Expires => [0]
Date => [Fri, 05 Jun 2020 12:35:04 GMT]
Content-Length => [216]
```

```
Content-Type => [application/xml; charset=utf-8]
<?xml version="1.0" encoding="utf-8"?>
  <autoUpdateResponse>
    [RESPONSECONTENT]
  </autoUpdateResponse>
```

In the above example the following variables have been used:

[RESPONSECONTENT]: This content comprises a number of XML elements and/or Base64 encoded data.

Note that the content of the HTTP header may vary in the example above.

***The following apply for the standard version of BankID Security Application, the EXE package:***

The response to the version control request can make the BankID program initiate downloading of an installation file of type EXE via HTTPS for updating the BankID program.

Before the update is installed, an informative dialogue is displayed to the user. In some circumstances, updating could be performed also when the user is not logged on as administrator.

## 6 Communication between BankID Security Application and the BankID server

BankID Security Application communicates directly with the BankID server:

- At program startup
- When BankID Security Application gets focus
- When URIs starting with "bankid:" are called

If the software is prohibited from communicating with the BankID server, the user will experience difficulties using BankID and a dialog warning about communication problems will be displayed.

The program communicates with the BankID server over https:

cavainternal.bankid.com

IP 185.198.4.18

Port 443

and

cavanotification.bankid.com

IP 185.198.4.19

Port 80

and

mexx.bankid.com

Port 443

**Note:** mexx.bankid.com is used for sending important text messages to the BankID client. It doesn't have a fixed IP address. The client works without it, but we recommend that the communication is permitted.

When the BankID program is configured to be used in the "kundtest" environment " (see <https://www.bankid.com/utvecklare/test>), it will communicate with:

cavainternal.test.bankid.com

IP 185.198.6.16

Port 443

and

cavanotification.test.bankid.com

IP 185.198.6.14

Port 80

and

mexx.test.bankid.com

Port 443

**Note:** mexx.bankid.com is used for sending important text messages to the BankID client. It doesn't have a fixed IP address. The client works without it, but we recommend that the communication is permitted.

## 7 Proxy settings

The BankID Security Application uses standard functions in the operating system to maintain a connection with the BankID server and the version control server. This means that any settings in for example Internet Explorer (on Windows) for proxy linking to the internet will be used.

There is support for direct configured proxies and "Proxy auto-config" (PAC) configurations, provided that they are done in Windows.

**If a connection to the internet is only done via a proxy that requires authentication, the BankID Security Application may not be able to communicate with the server. It is necessary to test with the proxy in place and make any needed adjustments to the proxy.**

The BankID program must be allowed to communicate through a possible proxy with the servers mentioned earlier. For example, an inspecting proxy must not break the https-link, but let it through without interference.

- If the BankID program can't communicate with the BankID server, a communication error message is displayed, message code 10023.
- If the BankID program can't communicate with the version control server, a communication error message is displayed, message code 10006.
- If there are proxy-settings in Windows, but the BankID program can't communicate with any of the servers, a message saying that the proxy settings may be wrong is displayed, message code 10034.

In certain cases we have observed that users that are linked via VPN and link to the trusted party service will sometimes have a problem if the client via DNS look-up gets the address of the company's proxy server. Since this address is part of the signature it will contain a value that the trusted party does not expect, causing the identification or signature to fail.

## 8 Managing installed versions

To manually check whether a new version of BankID Security Application is available, one approach is that the person responsible checks in at the installation sites listed in chapter 3 to see which the most recent version is.

**We recommend that the system administrator at least once a year downloads and installs the current version of the BankID program , to avoid dialogs telling the users to update.**

**This is particularly important when using the Enterprise variant of the BankID program , since it doesn't perform automatic updates and displays dialogs to the users only after being blocked.**

## 9 Smart card readers

For BankID on card, the user also needs drivers for the smart card reader. The drivers for the card readers supported by BankID can be downloaded via Windows Update. If you wish to package the drivers yourself, these are available via the links below. If you wish to use a different card reader this should be possible as long as it supports PC/SC. Some parties, such as Handelsbanken, require a specific card reader for use with their services.

### Examples of drivers for common card readers

#### Handelsbanken

<http://www.handelsbanken.se> (Click on "Privat" and type "drivrutiner" in the field "Sök".)

#### Todos Argos Mini II (Blue)

<https://www.nordea.se/privat/kundservice/programvaror-filer.html>

#### Gemalto Gemplus PC-Twin/Thales IDBridge CT30 (Transparent)

[https://supportportal.gemalto.com/csm?sys\\_id=80303b92db852e00d298728dae96198b&view=sp&id=csm\\_product&table=sn\\_customerservice\\_product\\_name](https://supportportal.gemalto.com/csm?sys_id=80303b92db852e00d298728dae96198b&view=sp&id=csm_product&table=sn_customerservice_product_name)

[https://supportportal.gemalto.com/csm?id=kb\\_article\\_view&sys\\_kb\\_id=0adc96844f350700873b69d18110c76a&sysparm\\_article=KB0016522](https://supportportal.gemalto.com/csm?id=kb_article_view&sys_kb_id=0adc96844f350700873b69d18110c76a&sysparm_article=KB0016522)

## 10 BankID on file stored on a USB memory stick

In previous versions of BankID Security Application it was possible to export BankID on file to USB sticks. This function is no longer available and no BankID on file from these versions are still valid.

## 11 Windows Terminal Server, roaming profiles

BankID Security Application is designed to work in most "thin client" environments with Windows Terminal Server, RDP, Citrix or VMWare Horizon, also systems with roaming profiles. Due to the vast number of possible configuration variants, it is however not possible to guarantee that a particular configuration works, and the Bank support organisations cannot always support installation and configuration for this kind of systems.

BankID on card works in most installations, provided that card reader drivers can be installed in the terminals/thin clients and that the system is configured in such a way that users are allowed to connect local USB devices (e.g. card readers). BankID on file is more dependent of the server installation. Please read about the limitations in different environments and for different versions of the BankID program below.

### 11.1 Citrix environments

The BankID program supports BankID on file and BankID on card in Citrix environment.

It's not possible for BankID or the banks to foresee and test all variants, so it's crucial that any given configuration is thoroughly tested and customized if needed by the system administrator before it is rolled out.

### 11.2 VMWare Horizon

The BankID program supports desktop versions of Windows (e.g. Windows 10) in VMWare Horizon environments.

### 11.3 Other terminal-server solutions and computers with roaming profiles

In other terminal-server environments that use roaming profiles, BankID will in many cases work with BankID Security Application, however under a few conditions. Also in this case, it's not possible for us to foresee and test all variants, so it's crucial that any given configuration is thoroughly tested and customized if needed by the system administrator before it is rolled out.

#### 11.3.1 For BankID on file:

- **The user must always use the same server (with Terminal Server) or computer (with roaming profiles), every time he or she logs in.** If the user logs in on different servers/computers:
  - A BankID on file will not appear at all
  - or an authentication attempt will cause a failure with an error message about wrong password or a general technical error (usually message code 10023 and 10024).

#### 11.3.2 For BankID on card:

- If the user always use the same server/computer with BankID on card, it will generally work without further adjustments.
- If the user is assigned servers dynamically, the %appdata%\BankID folder must not be synchronized between the servers. A possible solution is to delete this folder at logout (which however also will delete any BankID on file).

## **11.4 Known limitations/System Requirements:**

### **Windows Server 2003 or Windows Server 2008/R2:**

These Windows versions are not supported anymore and the BankID program can't be installed.

### **BankID program version 7.9.1 – 7.9.101 and 7.10.0 – 7.10.100**

These versions contain an error which makes them incompatible with Terminal server/Citrix installations. Please update to version 7.11.0 / enterprise version 7.11.100, or later.