GUIDE

STORMSHIELD DATA SECURITY ENTERPRISE

ADMINISTRATION GUIDE

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In the documentation, Stormshield Data Security Enterprise is referred to in its short form: SDS Enterprise and Stormshield Data Management Center in its short form: SDMC.

1. Getting started

This guide contains the information needed for managing SDS Enterprise and installing SDS Enterprise agents in your environment.

1.1 What does SDS Enterprise do?

SDS Enterprise guarantees the protection and confidentiality of data stored on local, shared or cloud-based folders, by relying on the transparent end-to-end encryption built into communication and collaboration tools. With it, access to protected data can also be restricted to defined groups and user profiles.

SDS Enterprise includes the SDMC administration console, from which you can define security policies and an agent installed on users' workstations. This agent makes it possible to apply policies and provides the following features:

- Real-time transparent file encryption, for transfer by e-mail or secure backup,
- Encryption of files stored on spaces synchronized with online hosting services OneDrive, DropBox, SharePoint and Oodrive,
- Encryption and signature of e-mails, making it possible to protect the data that they contain, and guarantee the authenticity of their sender's identity and the integrity of their contents,
- Sharing encrypted folders with coworkers over the corporate network,
- Secure and irreversible erasure of data,
- Electronic signature of files and folders, making it possible to guarantee the authenticity of their sender's identity and the integrity of their contents,
- Encryption of virtual disks, making it possible to store protected files. These virtual disks can be shared among coworkers;

The solution also includes the Stormshield Data Connector component, allowing to control the features of the SDS Enterprise solution through a PowerShell module or .NET APIs.

The SDMC administration console is hosted by Stormshield's Cloud services. In SDMC, you can:

- Create and configure the security policies applied by the SDS Enterprise agents installed on users' workstations,
- Declare the certification authorities on which user certificates depend,
- Declare corporate LDAP directories to manage certificate exchanges,
- Download SDS Enterprise agents' installation packages.

To use the SDMC console, start by creating a corporate account, then one or several administrator accounts as described in the section Logging in to SDMC.

You can also configure a security policy directly in a *.json* file and include it in the SDS Enterprise installation package. For more information on how to configuration this file, refer to the *Advanced configuration guide*.

1.2 How does SDS Enterprise work?

Requirement
You must have an infrastructure to generate encryption and signature keys for the users in the

company. You can then distribute them to users in whatever method you choose, for example via smart cards.
If you want to use the Microsoft Public Key Infrastructure solution, see Implementing the Microsoft Public Key Infrastructure (PKI) solution.

SDS Enterprise uses public key cryptography technology.

Each user has at least a pair of keys: a private key and a public key. The private key is carefully kept by its owner. The public key, by contrast, is freely distributed.

A different key pair is required for each purpose:

- A pair of encryption keys is required for encrypting and sharing confidential files or e-mails,
- A pair of signature keys is required to sign documents or e-mails,

To secure your users' private keys, you can store them on cryptographic media that support the PKCS#11 standard. For single sign-on (SSO) user authentication, the keys must be stored in the Windows Certificate Store.

To encrypt files or send encrypted messages to peers, users must know their peers' public encryption key.

Public keys are distributed to users as certificates. A certificate is an electronic document that associates a public key with its owner. SDS Enterprise supports the X.509 V3 certificate format. These certificates are stored in users' trusted address book, as explained in the Understanding the notion of users' trusted address book section.

RSA keys of users and certification authorities must be a minimum size of 4096 bits, with a public exponent strictly greater than 65536. The certificates and CRLs must be signed with the SHA-512 algorithm.

IMPORTANT
When renewing encryption keys, make sure to keep the users' old keys securely in their SDS Enterprise account. This will still allow the user to decrypt data encrypted with an old key.
For more information, see Decrypting user data with an old key or a delegation key and Decrypting user data with a recovery key.

For more information on managing certificates, refer to the sections Managing authority certificates and recovery certificates in SDMC and Setting account creation parameters.

1.3 How to deploy SDS Enterprise to your pool?

You can deploy SDS Enterprise to user workstations with remote distribution solutions such as Microsoft Endpoint Configuration Manager. You must deploy on the workstations:

- the SDS Enterprise agent installation package in the *.msi* format. You can download it from the SDMC console in French and English.
- deploying the signed security policy file and the peer certificate. The policy is created and configured in the SDMC console. You must download it from the console and have it signed by the administrator who has the role of security policy signatory. The signature utility is also available in SDMC.

Each time the SDS Enterprise agent restarts, it checks if a new policy update is available on the server that acts as the policy distribution point. If this is the case, it will apply it automatically.

For further information on agent deployment, refer to the Installing SDS Enterprise agents on the user stations and deploying the security policies section.

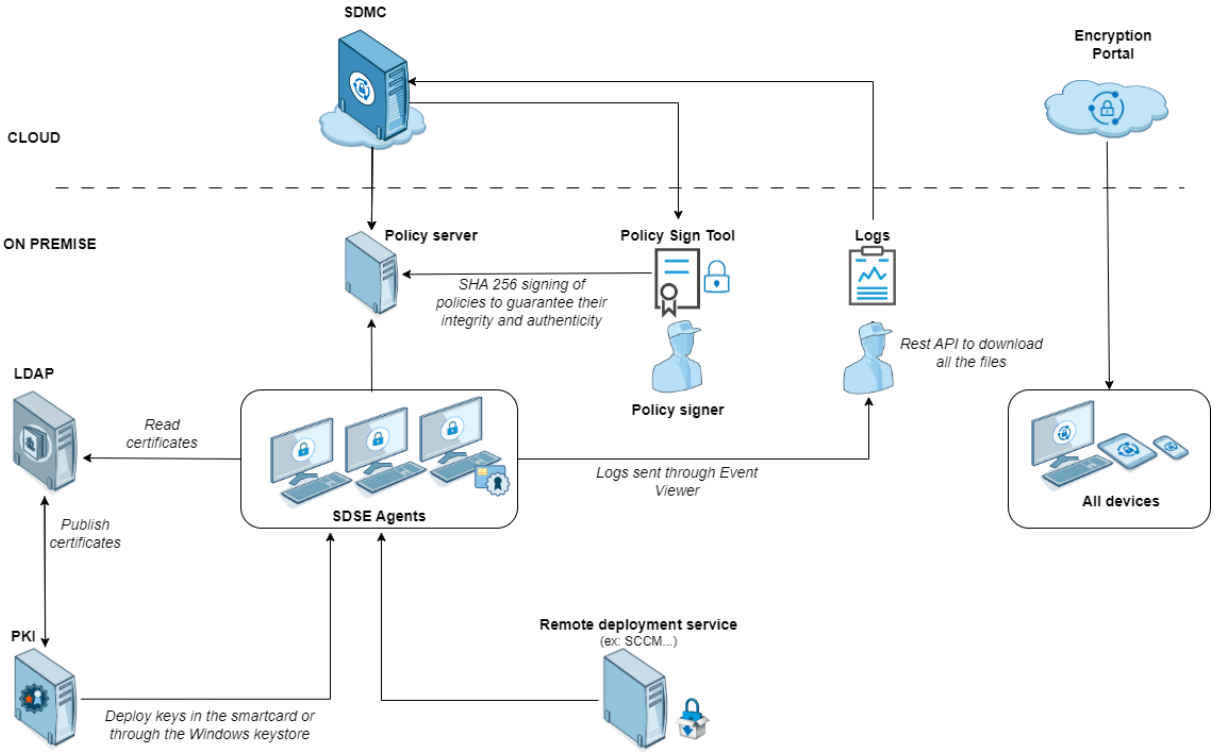
1.4 Understanding the concept of a trusted address book

SDS Enterprise makes it possible to manage a trusted address book on users' workstations: you can add the certificates (public keys) of the users and authorities that you trust in the address book.

Users can be automatically added to the trusted address book via an LDAP directory.

For more information, refer to the sections Managing LDAP directories in SDMC and Configuring corporate directories.

1.5 Architecture diagram of SDS Enterprise



2. Use environment

To use SDS Enterprise under the conditions of the Common Criteria evaluation and of the french qualification at standard level, it is essential to observe the following guidelines.

2.1 Recommendations on security watch

1. Regularly check security alerts provided on https://advisories.stormshield.eu/.
2. Always apply the software update if it contains a security breach correction. These updates are available on your customer area MyStormshield.

2.2 Recommendations on keys and certificates

1. RSA keys of users and certification authorities must be a minimum size of 4096 bits, with a public exponent strictly greater than 65536.
2. Certificates and CRLs must be signed with the SHA-256 or higher digest algorithm.
3. If the keys are provided by a public key infrastructure (PKI), their generation and distribution must conform to best practices. See the ANSSI ANSSI-PA-079 guidelines.

2.3 Recommendations on algorithms

SDS Enterprise supports the AES 256 encryption algorithm and the SHA-256 or higher signature algorithm.

For a use beyond the year 2030, the minimum size of an RSA key is 3072 bits.

2.4 Recommendations on user accounts

1. The user accounts must be protected by the AES 256 encryption algorithm and SHA-256 cryptographic hash standard.
2. Passwords must be subject to a security policy that prevents weak passwords and limits the number of failures before the account is blocked.
   In Smart Card mode, the policy must follow the manufacturer's recommendations.
3. Appropriate organizational measures must ensure the authenticity of policies from which the user accounts are created.
4. In case of using a hardware key ring (smart card or hardware token), this device protects the confidentiality and integrity of keys and certificates that it contains. Its PKCS#11 interface, installed by the System Administrator, provides secure access to user keys and certificates.

2.5 Recommendations on workstations

1. The workstation on which SDS Enterprise is installed must be healthy. There must be an information system security policy whose requirements are met on the workstations. This policy shall verify the installed software is regularly updated and the system is protected against viruses and spyware or malware (firewall properly configured, antivirus updates, etc.).
2. The security policy should also consider that the workstations not equipped with SDS Enterprise do not have access to shared confidential files on a server, so that a user can not cause a denial of service by altering or removing inadvertently or maliciously, files protected by the product.
3. Access to administrative functions of the workstation system is restricted only to system administrators.
4. The operating system must manage the event logs generated by the product in accordance with the security policy of the company. It must for example restrict read access to these logs to only those explicitly permitted.
5. The user must ensure that a potential attacker can not see or access the workstation when the SDS Enterprise session is open.

2.6 Recommendations on administrators

1. The security administrator is considered trusted. It defines the state-of-the-art SDS Enterprise security policy, possibly via the Stormshield Data Management Center application.
   Whenever this policy is modified, the security administrator signs it again before releasing it.
   He/she also defines the administration tool used, the smart card model deployed, the public key infrastructure implemented and any other tools required for secure use of the solution.
2. The system administrator responsible is also considered as trusted. He/She is responsible for the installation and maintenance of the application and workstation (operating system, protection software, *PKCS#11* interface library with a smart card, desktop and engineering software. He/She applies the security policy defined by the security administrator.
3. The user is a non-hostile person, trained in the use of the product. They must comply with the security policy in force in their organization, and in particular not share their credentials.

2.7 Security policy evaluated

The security policy used in the SDS Enterprise Common Criteria assessment, known as the "*Restricted* Policy", is as follows:

Account type	
Allowed account type	Smart card only
Password account creation	Disabled
Smart Card Account Creation	Manual and automatic creation allowed
Account management	Account with two keys (encryption key and signature key).
Encryption algorithm	AES-256

Signature algorithm	SHA-512
Stormshield Data File settings	
SmartFILE file creation	Disabled
Self-decryptable file creation	Disabled
File encryption for a recipient	Enabled
File decryption	Enabled
Network file encryption/decryption	Enabled
Folder encryption/decryption	Disabled
Encryption format	.sdsx
Encryption and decryption list	None
Directories	
Trusted directory automatic update	Disabled
Certificate revocation	
Certificate revocation check	Enabled
Others	
Stormshield Data Connector	Do not install
Stormshield Data Share	Not part of the default installation. Do not install.

3. Logging in to SDMC

Before using an SDMC administration console, you must first create your corporate account.

When creating your account, you can choose from two connection modes: password or SAML.

If you are using passwords, you must create the first administration account in order to log in to SDMC. Other administrators can then be created directly in SDMC. To create other administration accounts, refer to the section Managing administrators in SDMC.

For more information on the SAML connection mode, refer to the section Logging in to SDMC via an identity provider.

When you create your corporate account, you will have a 30-day trial period. After this period, you must import a permanent license. For more information on the license, see the section Managing the license.

3.1 Creating the corporate account

The corporate account contains all the information relating to your company: It is created at the beginning, when your company is registered on the SDMC solution.

The corporate account is dedicated to a single company and is never shared with other companies.

1. Click on https://sds.stormshieldcs.eu/admin/#/register-my-company.
2. Fill in the information about your company and your contact information.
3. Check the box **I agree with the General terms of use** after reading them.
4. Click on **Create** to save your corporate account.
5. Click on the link sent to you by e-mail to confirm the creation of the account and domain.
6. Stormshield must then confirm the activation of the account. You will receive a confirmation e-mail.

- If you have chosen the SAML connection mode, you can log in to SDMC with your corporate credentials. Prior to this step, you must have configured the connection mode via an identity provider. Refer to the section Logging in to SDMC via an identity provider.
  You can always access the page allowing you to connect to your SDMC administration console at https://sds.stormshieldcs.eu/admin. If you encounter a connection error, see Troubleshooting.
- If you have chosen the Password connection mode, you can proceed to the next step.

3.2 Creating the first administration account

If you have chosen the Password connection mode, you must create an administration account.

1. After Stormshield has confirmed the activation of your corporate account, you will receive an e-mail asking you to create an administration account within the specified time limit. Click on the **Create the administrator account** link in the e-mail.
2. Fill in the required fields. The email address is already entered.
3. Click on **Create** to save your administration account.
4. Log in to SDMC. You can always access the page allowing you to connect to your SDMC administration console at https://sds.stormshieldcs.eu/admin.

3.3 Logging in to SDMC via an identity provider

With the SAML protocol, SDMC can rely on an identity provider (IdP) to authenticate administrators.

To set up this connection mode:

- Provide SDMC with a well-known location indicating the IdP to contact,
- Configure the IdP of your choice so that it provides SDMC with the information required for authentication. The IdP must be accessible over the Internet and you must have a certificate for it.

3.3.1 Providing the well-known location

The well-known location is a configuration folder containing the *sdmc-configuration* configuration file. Provided by a server, it must be accessible via HTTPS from all networks. The well-known host server must approve the SDMC certificate before communication between the two is possible.

The *sdmc-configuration* file is in *JSON* format. It must contain the following information on the IdP to contact:

- *idpCertificate*: URL of the certificate assigned to the IdP,
- *idpUrl*: URL of the IdP to contact.

The file must be accessible at the following URL so that SDMC can reach it:

https://sdmc.[domain-company]/.well-known/sdmc-configuration

Where:

- *https* is mandatory,
- *sdmc.* is a sub-domain needed by the client to expose the well-known file,
- [domain-company] is replaced by the domain of the corporate account present in the e-mail address of the administrator attempting to connect,
- *.well-known* is the folder containing all the well-known files,
- *sdmc-configuration* is the file for SDMC. It allows retrieving SAML connection information such as the IdP URL.

For performance reasons, *idpUrl* and *idpCertificate* information is cached for 24 hours from the first connection. Changes to the *sdmc-configuration* file may therefore not be immediately sent to SDMC. This may take up to 24 hours.

EXAMPLE
For the domain name *example.com*, the well-known location must be accessible at the URL https://sdmc.example.com/.well-known/sdmc-configuration and must be in the following form:

```
{
"idpCertificate":"https://example.com/assets/certificate.pem",
"idpUrl":"https://example.com/saml/login"
}
```

3.3.2 Configuring the identity provider

The following parameters must be configured on the IdP so that it sends the expected information format to SDMC when an administrator attempts to log in:

Parameter	Type	Value	Status
"email"	String	Email address, in the form: http://schemas.xmlsoap.org/ws/2005/05/identity/claims/emailaddress	Mandatory
"firstName"	String	First name, in the form: http://schemas.xmlsoap.org/ws/2005/05/identity/claims/givenname	Optional
"lastName"	String	Surname, in the form: http://schemas.xmlsoap.org/ws/2005/05/identity/claims/surname	Optional

You must also add the following URLs to the IdP application configuration:

- **Entity ID**: https://sds.stormshieldcs.eu/api/internal/5/admins/saml/metadata.xml
- **Assertion Consumer Service URL**: https://sds.stormshieldcs.eu/api/internal/5/admins/saml/acs

3.3.3 Encrypting communications with the SDMC certificate

Some IdPs offer SAML 2.0 communication encryption. To implement it, add the following public key, extracted from the SDMC certificate, to the IdP configuration associated with communication encryption:

```
-----BEGIN PUBLIC KEY-----
MIICIjANBgkqhkiG9w0BAQEFAAOCAg8AMIICCgKCAgEAu5nGaYFmaHGk6fu6+H5b
qo/JBUvbuZQlhWE7Ybocns4YIEKVSi6B9QtxasLN4BhZuh6autZmhLqQtZtxV8S4
4BkU44KXNeKPGGhD1izp2mJ8iE6Z3lhUCYRxrRebZQ2Fmu8Z/rKpUDMxwhjOskkQ
LVHWflUIT8heRQuUNqN3nqF7049Fe3rQQvI07NOokmPnwO5EpptopOCRj0b2FSGx
KdTk/RNm/QKBuirF/7w8JremeG6W+HIC6810cN/Lf88aHoL9NKm0A9eknJyzcKy3
wH0TTBF3N4n521psttg22hOZjQXMqSjkXUPHEMBq6br9Tixg53Q8rJhthS+Ahosb
qsxRkAOUiaEPmOR8Kx6AlJ6gdGJe0PAqiZTOiYKEFx1yU6kEbpnU7KkKJwsmOZVg
VQMFIVOQiv/1wRLx49ybviZqyNgFuZx4+4pGQt3ETkDQhK10s0xO7/UUMYEKu59C
YSAyJNVYVjujC2QqaP8YXcJNndEbSPH58PxFDZ8SmBa9uSzxcO2o+Zg2972dxUXW
fIZpWifdkDw6ktor9LhaqDYUw6KLmHh8phRzg49Kt7JaJUtBc9x0YgaXJ23ZfaP9
ndOaWK4loycCS4yyA6Uqupqp5oJV/pyPEAIzrYAVHHBtyxcv2uCXWFlmBZeN6RDZ
Y6tY9gfqqoatDT32PfH4Xs0CAwEAAQ==
-----END PUBLIC KEY-----
```

3.3.4 Troubleshooting

The authentication of an SDMC administrator failed and an error code appears. Ask the administrator for a code. The error may be one of the following:

4001	The well-known location is not available.
4002	The identity provider is not sending the right information. Check the configuration.
4003	The certificate's URL address cannot be accessed. Internal error. Forward the error code to Stormshield.
4004	The well-known location was not correctly configured. Check the configuration.
4006	Internal error. Contact Stormshield and forward the error code.

3.4 Changing the connection mode

If you wish to change the connection mode (SAML or password), we advise you to get in touch with Stormshield. Stormshield will make the necessary changes for you.

4. Managing the license

The SDMC administration console is provided by default with a trial license that allows it to be used for 30 day period following its initial startup.

After 30 days, you must obtain your license from your MyStormshield client area and import it in SDMC.

4.1 Getting the SDS Enterprise license

1. Make sure you have the Stormshield PDF delivery document and log in to your MyStormshield client area.
2. From the menu on the left, select **SDS - General** > **Register SDS software**, and accept the terms of use.
3. Enter the following information:
   - **Associated company**: Name of the company under which you are registered at Stormshield.
   - **License key**: Character string located in the Serial number column of the delivery document (for example F0BBABBJ-At07vu9Y).
   - **Reseller**: name of your SDS Enterprise reseller.
4. Click on **Save**.
5. On your personal area dashboard, from the **List of products** table, click on your serial number.
6. Click on **Download all licenses** and unzip the downloaded file.

4.2 Importing the license in SDMC

1. In SDMC, select the **License** menu on the left.
2. Click on **Import** and select the file you have just unzipped (for example *F0BBABBJ-At07vu9Y.licence*).

The SDMC console will not import a license if it has expired.

4.3 Looking up license information

The following information is available in the **License** menu:

- The license key to use for agents on workstations,
- License validity dates.

5. Managing administrators in SDMC

If you have chosen the Password connection mode when the corporate account was created, during the initial connection to SDMC, you created an administrator account. This administrator is allowed to perform all configuration operations on the console, and may also invite other administrators to carry out these operations.

If you have chosen the SAML connection mode, the list of administrators will be filled in automatically every time a new administrator connects. No manual operations are possible.

5.1 Inviting a new administrator

The first administrator created is allowed to share administration tasks with other users. He must send them an invitation so that they can create their administration accounts. By default, these invited administrators are granted only privileges to create and edit security policies. For more information, refer to the section Modifying an administrator's permissions.

1. Select the **Administrators** menu on the left.
2. Click on **Invite**.
3. In the **E-mail address** field, enter the e-mail address of the person you wish to invite. The address must be part of the same domain as the corporate account's domain.
4. Click on **Invite**. The new administrator will receive an e-mail telling him to create his administrator account via a link. This link is valid for 72 hours.
5. Select the **Administrators** menu on the left. The administrator that you have just invited will now appear on the list. Only his e-mail address is entered as his invitation remains pending until he creates his administrator account

5.2 Accepting an invitation to manage

After you receive an e-mail inviting you to manage SDS Enterprise, you must create your administration account within 72 hours.

1. Open the e-mail that you received from SDS Enterprise.
2. Click on **Create my account**.
3. Fill in the form with information about your account, then click on **Save**.
4. You can now log in to the SDMC to manage SDS Enterprise according to your privileges. For more information on permissions, refer to the section Modifying an administrator's permissions.

If the 72 hours have lapsed or if the administrator no longer wishes to invite you, an error message will appear when you attempt to access the form. For more information, contact the administrator.

5.3 Managing the list of administrators

- Select the **Administrators** menu on the left. The list of administrators appears.
  The status of the administrator is shown in the **Creation** column:
  - **Validation pending:** The administrator has received the invitation but has not yet created the account. You can send the e-mail again by clicking on the administrator's row and on **Resend invitation**.
  - **Invitation expired**: The administrator did not create his account within 72 hours and the invitation has expired. You can send the e-mail again by clicking on the administrator's row and on **Resend invitation**.
  - **Date**: The administrator has created the account and can log in to SDMC.

5.4 Modifying an administrator's permissions

To modify an administrator's privileges, you must possess **Global administrator** privileges.

1. Select the **Administrators** menu on the left. The list of administrators appears.
2. Click on the administrator whose privileges you would like to modify. The page showing the administrator's properties appears.
3. In the **Permissions** tab, enable or disable the various permissions as needed:
   - **Global administrator** makes it possible to invite other administrators, delete administrators or modify their permissions.
     Administrators cannot modify this permission on their own.
   - **Managing API keys** makes it possible to generate SDMC API keys in order to provide them to third-party applications. It also allows you to view and delete the list of keys.

5.5 Deleting administrators

You can delete administrators if you no longer wish to allow them to manage SDS Enterprise. Connected administrators cannot delete themselves.

1. Select the **Administrators** menu on the left.
2. In the list of administrators, click on the icon on row of the administrator you want to delete.
3. Click on **Delete permanently,** then confirm.

6. Managing authority certificates and recovery certificates in SDMC

Using SDS Enterprise requires the use of encryption and signature keys. In addition, the keys must be certified by trusted certification authorities.

Requirements
You must have an infrastructure to generate encryption and signature keys for the users in the company. You can then distribute them to users in whatever method you choose, for example via smart cards.
If you want to use the Microsoft Public Key Infrastructure solution, see Implementing the Microsoft Public Key Infrastructure (PKI) solution.

SDMC makes it possible to declare the certification authorities that issued certificates containing your users' identities and public keys. These authorities are therefore considered trustworthy.

To do so, you must import the certificates from all authorities in the certificate library, then use them in your security policies.

SDMC also makes it possible to import recovery certificates, which are necessary when users lose their encryption keys. For more information, see the section Enabling data recovery.

Certificates are distributed to users via LDAP directories and added automatically to their trusted address book. For more information, refer to the section Managing LDAP directories in SDMC.

6.1 Understanding the use of user keys and certificates

The following certificate formats are supported:

- *.cer*
- *.cert*
- *.crt*
- *.der*
- *.pem*

If several certificates are available for the same user (in the trusted address book or in an LDAP directory), SDS Enterprise automatically selects the valid certificate with the most recent validity start date.

If the e-mail address of a user changes (e.g., change in marital or employment status), this user's certificate must be renewed (with a publication in the LDAP directory, if necessary) so that their e-mail address is the same as the one on their certificate(s). If this is not the case, other users will no longer be able to send secured messages, or encrypt files or folder for any user whose e-mail address has changed.

Keys generated by your infrastructure must comply with the following PKCS#11 attributes:

- Private key:
  - CKA_DECRYPT
  - CKA_SIGN
  - CKA_SIGN_RECOVER
  - CKA_UNWRAP
- Public key:
  - CKA_ENCRYPT
  - CKA_VERIFY
  - CKA_VERIFY_RECOVER
  - CKA_WRAP

6.2 Importing certificates in SDMC

1. Select the **Certificate library** menu on the left.
2. Click on **Import** at the top on the right.
3. Select the file and certificate type and import it.

The list of certificates shows their names, type, the security policies in which they are used and their expiry date.

After you have imported the certificates of the certification authorities that you consider trustworthy, and recovery certificates, you can use them in your security policies. See section Creating a policy.

6.3 Renaming, deleting or downloading certificates

- In the **Certificate library** menu on the left, click on a certificate's icon to choose one of three actions.

7. Managing LDAP directories in SDMC

In the SDMC LDAP library, the LDAP directories in your organization that contain your users' certificates can be declared.

Certificates in X509 format contain, in addition to other information, data concerning the holder and the holder's public key. The public key is used for the encryption of confidential data, which can then be sent securely.

LDAP directories complement the SDS Enterprise trusted user address book. For more information on the trusted address book, refer to the section Managing the trusted address book from the SDS Enterprise agent.

Next, you will indicate the LDAP directories to use in your security policies, so that encryption and signature operations can be performed on users' workstations. For more information on how to use directories in your policies, refer to Configuring corporate directories.

7.1 Adding an LDAP directory

1. Select the **LDAP library** menu on the left.
2. Click on **Add** at the top on the right.
3. Fill out all fields.
   The standard port is 389 for LDAP connections and 636 for LDAPS secure connections.
   We recommend specifying an account with read-only access to the directory as logins are saved in plain text in security policies.
4. Click on **Add**.

The list of directories shows their name, the security policies in which they are used and the date of the last modification.

After you have added the LDAP directories, you can use them in your security policies, For more information, refer to the section Configuring corporate directories.

7.2 Editing, duplicating or deleting LDAP directories

- In the **LDAP library** menu on the left, click on a directory's icon to choose one of three actions.

8. Managing security policies in SDMC

SDMC used to create and configure security policies, which you then deploy to user workstations.

> **NOTE**
> Agent installation packages are supplied with a default security policy, which applies if you do not deploy a custom policy.

Define the following elements in the policies:

- Encryption, signature and user account management parameters, including account creation and connection settings, data recovery management,
- Feature settings,
- Directory settings,
- Certificate revocation settings,
- Distribution points for policy updates.

You can also configure a policy directly in a *.JSON* file. For more information, refer to the SDS Enterprise*Advanced configuration guide*.

After you have configured a security policy, you can download it to include it in your agent installation package.

8.1 Creating a policy

You can either create a new policy from a template, or duplicate an existing one.

8.1.1 Creating a new policy

Two policy models are available: a default policy and a "Diffusion Restreinte" policy.

For more information on the “Diffusion Restreinte” policy, see Use environment.

To create a new policy from a template:

1. Select the **Policies** menu on the left.
2. Click on **Create** at the top on the right.
3. Enter a name for the policy.
4. Select a policy template.
5. Click on **Create** to confirm. The new policy will appear in the list of policies.
6. Click on the row of a policy to configure it. Refer to the following sections for details on parameters.

8.1.2 Creating a policy from an existing policy

1. In the list of policies, click on the icon of a policy that you want to duplicate.
2. Select the **Duplicate** menu.
3. Enter a name for the policy.

4. Click on **Duplicate**. The duplicated policy appears in the list.
5. Click on the row of a policy to configure it. Refer to the following sections for details on parameters.

8.2 Importing policies

You can import an existing security policy in the *.json* format in SDMC.

The policy must have been downloaded from SDMC. This procedure allows for example to keep existing policies when a company account is deleted and re-created.

To import a policy:

1. Select the **Policies** menu on the left.
2. Click on **Import** at the top on the right.
3. Select a policy file in *JSON* format.
4. If required, modify the policy's default name and the n import it.

However, LDAP directories and authorities certificates indicated in the policy are not imported. You must select them again in the policy's **Directory** and **Authority** menus.

8.3 Configuring user accounts

There are three types of user accounts to choose from: Password, smart card or Single Sign-on (SSO).

With password and smart card accounts, corporate users must log in to their SDS Enterprise accounts.

In Single Sign-on mode, users' connection to SDS Enterprise is transparent and automatic when they log in to their Windows session.

The **Accounts** menu of the security policy allows you to choose the generic user account settings, the settings for creating accounts, the settings for recovering encrypted data, along with the settings for displaying keys in the **Keyring** menu of the agent.

For more information on creating user accounts, refer to Creating and managing SDS Enterprise accounts on user workstations and Creating a Single Sign-On (SSO) account.

8.3.1 Configuring generic account settings

In **Policies** > **Accounts** > **Settings**, configure the generic user account settings:

Account type	Select an SDS Enterprise account for the following user categories: Smart card, Password, Password and smart card, or Single Sign-on (SSO). For more information on how to use SSO mode, refer to the section Creating a Single Sign-On (SSO) account.
Encryption and signature	
Encryption algorithm	Algorithm used to encrypt the data. SDS Enterprise offers only the AES algorithm.
Signature algorithm	Algorithm used to sign data. Choose SHA-256 or SHA-512.
Card or USB token accounts	

Middleware	Middleware allows SDS Enterprise to communicate with all types of smart cards and USB tokens. Select the middleware to use on user workstations from the list of middleware supported by SDS Enterprise. Only one middleware solution can be selected for each policy. The Stormshield Data Security middleware is selected and installed by default. In the security policy's *.json* configuration file, you can manually specify several middleware options to use (cardMiddlewares parameter). For more information, see the *SDS Enterprise Advanced configuration guide*. The middleware must be installed beforehand on user workstations. For more information, see section Configuring the middleware required for Card or USB token accounts.

8.3.2 Setting account creation parameters

In **Policies** > **Accounts** > **Creation**, configure the parameters for the creation of user accounts. User accounts can then be created manually or automatically from SDS Enterprise agents. For further information on creating accounts, see Creating and managing SDS Enterprise accounts on user workstations.

General settings	Allow or prohibit the creation of smart card, USB token or password accounts on the SDS Enterprise agent. Smart card and USB token accounts can either be created manually or automatically. Password accounts can only be created manually. These settings are not available when you select an SSO account.
Key management	Specify whether you are creating an account with a single key (encryption or signature) or an account with two keys (encryption key and signature key). For the automatic creation of accounts on the agent, select the certification authority(ies) that issue(s) the keys to use to create the account. The authorities found in the list are the ones that were already declared in the certificate library. For more information, refer to the section Managing authority certificates and recovery certificates in SDMC.
Password account creation	
Password strength	Select the password strength criteria for password accounts. These settings are not available when you select an SSO account.
Manual creation of password accounts	For the manual creation of password accounts on the agent: Select the origin of the user keys, used for encryption and/or signature: you can authorize importing of keys and their associated certificates in the form of .p12 files, or local generation of RSA keys when creating the account. You can also authorize both methods at a time. If you select **Generate keys locally**, SDS Enterprise will generate self-certified certificates. Next: • Select the size of the RSA keys that SDS Enterprise will generate when it creates the account. • Set the validity period of the certificates for public keys in years **When creating an account** or **When renewing a key**.

8.3.3 Configuring user connections

In the **Policies** > **Accounts** > **Connection** menu, define the SDS Enterprise session behavior in the following situations:

- when the user removes their smart card or USB token, in the case of Card or USB token accounts,
- when the Windows screensaver is triggered by inactivity,
- when the user locks their Windows session.

For more information on locking and logging out from accounts, see *Locking the SDS Enterprise account or logging out* in the *Advanced User Guide*.

When the screensaver activates	When the Windows screensaver activates on the user's workstation, the SDS Enterprise session is locked by default. You can also choose to the user or keep the SDS Enterprise session active. This latter option is not recommended for security reasons. Using the **Lock SDS Enterprise session** or **Log off user** options may have unwanted effects if you are using the Stormshield Data Virtual Disk feature with data in use at the time the screen saver is activated or the session locked.
When the Windows session locks	When users lock their Windows session, they are logged out of their SDS Enterprise session by default. You can also choose to lock the SDS Enterprise session or keep the session active.
When the smart card or USB token is removed	When the user removes their smart card or USB token, they are logged out of their SDS Enterprise session by default. You can also choose to lock the SDS Enterprise session.

8.3.4 Enabling data recovery

Recovery accounts make it possible to secure the use of SDS Enterprise. If, for example, a user leaves the company without decrypting all their data, the recovery account will allow them to recover all the data.

Recovery accounts are created by administrators of the public key infrastructure (PKI) that the organization uses.

If you are using Microsoft's public key infrastructure solution, for information on how to obtain a recovery account certificate, see Creating a recovery account.

SDMC makes it possible to list the certificates (public keys) of recovery accounts. This list is specific to each security policy.

Recovery certificates are shared on user workstations via the security policy, so all that users encrypt will also be encrypted with the recovery certificate. Such data can then be decrypted with the recovery account's private key.

IMPORTANT
Recovery accounts must be protected with a sufficiently strong password and kept in a safe location.

Recovery certificates must be added beforehand in the Certificate library menu.

In **Policies** > **Accounts** > **Data recovery**, indicate the recovery certificates that you wish to use for this policy:

1. Click on **Add from library**.
2. Select one or more certificates.
3. Click on **Add**.

On the SDS Enterprise agent side, recovery certificates can be looked up in the user's key ring. For more information, refer to the section Decrypting a user's data with a recovery certificate.

8.3.5 Managing user keyrings

In the **Policies** > **Accounts** > **Keyring** menu, configure the display of tabs for managing encryption, signature, decryption and recovery keys in the user keyring. These tabs serve to perform various actions on your keys: renew them, export or import them, etc. For more information, see Creating and managing SDS Enterprise accounts on user workstations.

To display the user's keyring on the workstation, go to the SDS Enterprise agent properties:

1. Right-click on the SDS Enterprise icon in the system tray.
2. Select **Properties**.
3. Select the **Configuration** tab.
4. Double-click on the **Key ring** icon.

8.4 Configuring features

The **Features** menu in the security policy makes it possible to configure the major features in SDS Enterprise. The license determines which features are available on agents.

8.4.1 Configuring Stormshield Data File

File encryption in Stormshield Data File makes it possible to guarantee the confidentiality of the data that your users process every day. With this feature, encryption and decryption tasks on user-defined event triggers can also be automated.

For more information, refer to *Securing files* in the *SDS Enterprise advanced user guide.*

Configuring file encryption

- Go to **Policies** > **Features** > **File**, and enable the settings of your choice.

Properties	The default encryption format is *.sdsx*. In this format, the user can edit an encrypted file transparently without the need to decrypt and subsequently re-encrypt it, as was the case with the previous *sbox* format.
Converting .sbox files to .sdsx format	These options work with the *.sdsx* encryption format. If you want your users' files in the old *.sbox* format to be replaced by files in *.sdsx* format, activate the **Force conversion of .sbox files to .sdsx format** option. When a user opens an encrypted file with the *.sbox* extension, it is automatically converted to *.sdsx* format and the user does not need to re-encrypt it after opening. The new file is protected for the same recipients as the original file. You can specify a path to move old *.sbox* files to after conversion. Otherwise, they remain in their original location. Conversion only works on one *.sbox* file at a time. If this option is disabled, two context menus allow you to **Open** or **Unprotect** a *.sbox* file. If this option is enabled, a single menu is used to **Open** the file. If the user selects several files including at least one *.sbox* file, only the **Open** menu is visible.

Encryption and decryption	Select the items for which you wish to authorize encryption and decryption.
Multiple encryption	• If the user frequently needs to encrypt a large volume of files, unselect **Confirm encryption for each file**. • You can choose whether to encrypt hidden files.
Special encryption	• When you enable file encryption for a recipient, you will use the recipient's public key for encryption and they will use their private key for decryption. • Self-decrypting files can be shared with recipients who do not have either Stormshield Data File or Security BOX SmartFILE. • SmartFILEs can be shared with recipients who only have Security BOX SmartFILE. For more information, see *Creating a Security BOX SmartFILE compatible file* in the *SDS Enterprise Advanced User Guide*.
Encryption of read-only files	There are several options available for the encryption of read-only files.
Manual encryption and decryption of lists	See the section below on how to use lists.
Windows encryption of the decryption temporary directory	By default, Windows encryption of the temporary directory for decrypting *.sdsx* files (directory C:\Users\[user]\AppData\LocalLow\Stormshield\Stormshield Data Security\Decrypted) is enabled. You can disable it.

For more information on the advanced use of the File feature on the SDS Enterprise agent, refer to the section Stormshield Data File.

Using lists

Encryption and decryption lists can be used to automate file encryption and decryption for error-free ease of use. A file list can also be created to prevent selected files from being encrypted.

Using encryption and decryption lists

Files enrolled in encryption or decryption lists are automatically processed at a predetermined time or when a predetermined event takes place. For example, you can choose to automatically encrypt files when the session is locked, when the user logs out from SDS Enterprise, or at set intervals (e.g., every 15 minutes) as a background task.

- Indicate the paths of the files or folders to be encrypted or decrypted. The list can be exported and imported in *JSON* format.

EXAMPLE OF A .JSON FILE

```
{
"askForConfirmation":false,
"path":"C:\\Users\\john\\Documents\\Files","recursive":true
},
{
"askForConfirmation":false,
"path":"C:\\Users\\john\\Documents\\Images","recursive":false
}
```

Encryption and decryption lists can also be used to manually launch a batch encryption or decryption of all of the list items or of selected ones only.

Recursion of automatic file list encryption or decryption defines the sub-folder inclusion behavior. It is set by the **Include sub-folders** option and can either be on or off. Recursion is applied as follows:

- as a mode, it applies to all items and can be enabled and repeated in various screens.
- as a property of a folder, it defines whether only the indicated folder will be encrypted or decrypted automatically or its sub-folders as well.
- as a property of a file, it defines whether only the indicated file will be encrypted or decrypted automatically or whether files with the same name, but located in other folders, will also be encrypted or decrypted.
- as a property of a file set defined by an expression using wildcard characters (* and ?), it defines whether only the file set will be encrypted or decrypted, or whether files of the same name located in other folders, will also be encrypted or decrypted.

Using exclusion lists

For security reasons, you may need to prevent the encryption of certain files so that they will not be encrypted by mistake. You can create an exclusion list, which will contain the list of files that must not be encrypted.

- Indicate the paths of the files or folders to exclude from encryption. The list can be exported and imported in *JSON* format.

The recursion principles explained in Using encryption and decryption lists apply to exclusion lists.

To prevent the encryption of the system folder (C:\WINDOWS\ by default) and the Stormshield Data File installation folder (C:\Program Files\Arkoon\Security BOX by default), we recommend adding these folders to the exclusion list.

Do take note of the following rules as well:

1. If a file/folder belongs to both the encryption and exclusion lists, the exclusion list overrides the encryption list.
2. When several exclusion rules apply to a file, the most restrictive one applies. If one requires confirmation and the other excludes it unconditionally, the file is excluded without any confirmation request.
3. Exclusion rules are enforced between the verification of hidden files and that of read-only files. In other words, if the rules are as follows:

a. the hidden files must not be encrypted,

b. a confirmation request for read-only files is required.

If both rules apply to a file, it will not be encrypted without a confirmation request.

8.4.2 Configuring Stormshield Data Team

INFORMATION
As of January 2025, Stormshield will no longer offer functional upgrades to the Stormshield Data Team feature. The feature will switch to maintenance mode from this date.

Stormshield Data Team makes it possible to automatically encrypt files wherever they are, in real time and transparently. Encryption is defined by security rules on folders, whether shared

or not, and these rules specify which collaborators are authorized to read and edit files stored in the folders.

For more information, refer to *Automatically securing folder content* in the *SDS Enterprise advanced user guide.*

To configure automatic folder encryption:

- Go to **Policies** > **Features** > **Team**, and enable the settings of your choice.

Properties	Select the possible actions when changes occur with the collaborators selected in the security rules, or when there is an issue with the user certificate revocation list. In the first option, access to files can be denied to users who have been deleted from a rule. The two options that follow make it possible to retain such users' access to files.
Showing coworkers	When a folder is protected by a rule: • Either all users can show the rule, regardless of whether they are coworkers in the rule, • Or only coworkers in the rule can show the rule,
Authorizations	These four options correspond to the menus available in the SDS Enterprise pop-up menu when the user right-clicks on a folder. • If the option **Allow encryption according to the rules defined** is enabled, the user will see the **Secure according to defined rules** pop-up menu, which will allow the encryption of a folder by sharing it with other users. • If the **Allow save and restore** option is enabled, the user will be able to see the **Advanced > Save** and **Advanced > Restore** pop-up menus. • If the option **Allow encryption** is enabled, the user will see the **Secure the folder** pop-up menu, which will allow the encryption of a folder without sharing it with other users. • If the **Allow deletion** option is enabled, the user will be able to see the **Advanced > Delete** pop-up menu. For detailed information on these menus, refer to *Automatically securing folder content* in the *SDS Enterprise Advanced user guide.*
Access to encrypted files	Set the rules granting access to files encrypted in a folder. This applies to situations when the user certificate is revoked or has an issue, or when the certificate revocation list can no longer be accessed.
Date changes when files are encrypted or decrypted	Select these options if you want the dates on which the file was created, modified or last accessed to be changed every time a file is encrypted or decrypted.

Advanced settings	Advanced settings make it possible to change some of the default behavior settings in Stormshield Data Team: • by default, the report window closes after encryption. • By default, the encryption progress window is not shown. • By default, encrypted files can be opened in non-secure folders. Do be careful, however. Depending on the application used, if you open an encrypted file in a non-secure folder, a temporary plaintext file may be created in this folder. When you save and close the file, the temporary plaintext replaces the original encrypted file. Moreover, even if you do not save the file, the deleted temporary plaintext file remains on your PC and can be recovered using specialized tools, which is a security risk. • By default, encrypted files and folders are decrypted when they are copied or moved to a non-secure folder. Regardless of the option selected here, the **Save** agent's pop-up menu always makes it possible to copy encrypted files and secure folders while preserving encryption. For more information on this menu, refer to *Saving an encrypted file* in the *Advanced user guide SDS Enterprise*. You can also specify a list of folders on which a user will not be able to create a Team security rule to automatically secure the folder. Enter folder paths. If you enter a value already present in the list, you cannot add it. The list is recursive and automatically includes sub-folders.

For more information on the advanced use of the Team feature on the SDS Enterprise agent, refer to the section Stormshield Data Team.

8.4.3 Configuring Stormshield Data Disk

With Stormshield Data Disk, virtual encrypted volumes can be created, on which users can securely store confidential data. The disk owner can choose whether to allow coworkers to access their encrypted disk.

For more information, refer to *Creating secure virtual volumes* in the *SDS Enterprise Advanced user guide*.

To configure the creation of encrypted virtual volumes:

- Go to **Policies** > **Features** > **Disk**, and enable the settings of your choice.

Mount volumes as non removable disks	Depending on your infrastructure, choose whether to mount volumes as virtual or removable disks.
Maximum size allowed	Specify in MB the maximum size that the volume can occupy. Enter a size larger than 1MB.
File system	Choose the type of file system: NTFS, FAT32 or FAT.
Volume name	Keep the name of the default volume displayed in Windows Explorer or customize the name.
Quick actions	If you enable rapid volume creation, the method used will create the Disk volume more rapidly. However, this method is not recommended for creating a volume on a network share. Rapid volume formatting reduces formatting time but does not completely erase data from the disk, just like the Windows rapid formatting feature.

Automatic volume creation	• Select **Create a volume automatically** if you want a volume to be created the first time the user logs in to SDS Enterprise. You can choose to display a report after the volume is created. • Enter the full path to the file associated with the virtual volume, and in which the user's confidential data will be stored. The file must have a *.vbox* extension. Windows environment variables can be used in the path to the file (e.g., %PATH%), as well as Windows CSIDL values, and the SDS Enterprise passwords below between <>: <*UserId*>: The user's SDS Enterprise identifier, <*RootPath1*>: Main folder of user accounts, specified in the policy, <*RootPath2*>: Backup folder of user accounts, specified in the policy. <*COMMON_APPDATA*>: Folder containing application data for all users, C:\Program Data. <*COMMON_DOCUMENTS*>: Folder containing the common files for all users, C:\Users\Public\Documents. <*DESKTOP*>: Folder containing files on the desktop, C:\Users\username\Desktop. <*LOCAL_APPDATA*>: Folder containing the data of local applications, C:\Users\username\AppData\Local. <*MYDOCUMENTS*>: Folder containing the user's files, C:\Users\username\Documents. <*PROFILE*>: Folder of the user's profile, C:\Users\username. <*USERNAME*>: Windows username. • Specify the size of the volume created automatically. By default, the volume size will be 10% of the disk space available on the user workstation. • Enable or disable automatic mounting of the volume when the user logs in to SDS Enterprise. • Select the **Drive letter** associated with the volume (Z: by default).

For more information on the advanced use of the Disk feature on the SDS Enterprise agent, refer to the section Stormshield Data Virtual Disk.

8.4.4 Configuring Stormshield Data Mail

Stormshield Data Mail makes it possible to encrypt and sign e-mails to guarantee their confidentiality and integrity, and confirm the identity of the sender. Stormshield Data Mail runs with the help of an extension built into users' Outlook mail client.

For more information, refer to *Securing e-mails* in the *SDS Enterprise* Advanced user guide.

Securing e-mails: a few concepts

Stormshield Data Mail uses public key cryptography technology.

Each peer has one or several pairs of keys: a private key and a public key. The **private key** is carefully kept by its owner. The **public key** (certificate), by contrast, is freely distributed.

Stormshield Data Mail can use one of the following:

- A single key pair for encryption and signing,
- Two different key pairs, one for encryption, the other for signing.

For more information on key pairs, refer to Setting account creation parameters.

Security level

The S/MIME V3 standard allows the body of a message — its text and attachments — to be secured.

However, for S/MIME standards, the header of the message (rfc822 header) is not secured. This header contains the name of the sender, the list of recipients, the transmission date, and especially the subject of the message.

Therefore, even if the message is secured, its subject could have been read and modified over the network.

Encryption

The sender encrypts messages with the recipient's public key; the recipient uses their own private key to decrypt the message. Since the recipient is the sole owner of the required private key, the sender is assured that the message cannot be read by third parties.

NOTE
Senders will be able to encrypt an e-mail only if they have a encryption key in their key ring. As a SDS Enterprise account only has one signature key, it cannot be used to encrypt e-mails.

Digital signatures

A digital signature is a mathematical "seal" imprinted on the message: it guarantees the integrity of the message and the identity of its signer.

Signers sign messages with their private keys. Recipients verify the signature by using the signer's public key. Since the signer is in sole possession of the private key used to sign the message, the recipient is sure that it has been sent by the signer and that the message has not been modified during its transfer.

NOTE
Senders will be able to sign an e-mail only if they have a signature key in their key ring. A SDS Enterprise account which only has en encryption key cannot be used to sign e-mails then.

There are two types of signatures: opaque and detached (i.e., plaintext) signatures. Stormshield Data Mail allows e-mails to be sent and received with both types of signature.

Detached signatures allow recipients to read the e-mail even if their messaging software does not support S/MIME format or refuses to display e-mails with signatures that cannot be confirmed. This occurs, for example, when certificates and revocation lists are not available.

However a detached signature may be modified when the e-mail is sent. Usually servers do not modify e-mails, but tags can be added and white lines can be added or removed. The signature of the e-mail would then be incorrect.

When a signed e-mail arrives and is opened in the reading pane or in a new window, SDS Enterprise checks among other things that the sender's e-mail address and the address specified in the associated certificate match. If they do not match, a warning is displayed in the security lower band of the e-mail received.

Only one error is showed in the security report. If several errors or warnings occurred, only the most critical is showed.

Trusted address book

Stormshield Data Mail includes a trusted address book that you can use to insert the certificates of correspondents and authorities that you trust.

If you wish to encrypt a message for one or several recipients for whom you do not have valid certificates in your trusted address book, the LDAP directory can be queried automatically. To do so, you must declare an LDAP directory beforehand and enable automatic updates from the LDAP directory. For more information, see the section Configuring corporate directories.

Encrypting and signing e-mails

To configure how e-mails are encrypted and signed:

- Go to **Policies** > **Features** > **Mail**, and enable the settings of your choice.

Properties	Select the type of opaque or detached signature to use when sending and receiving e-mails. Refer to the section Digital signatures for further information. If you choose to enable signature and encryption by default on all messages, the user will still be able to disable them on individual messages.
PGP encryption	If you choose to allow message encryption and decryption in PGP format, you must specify one or several WKDs (Web Key Directories) to query. Refer to the following line in this table.
WKD server	In the **Directories** menu of the policy, you can indicate the WKD servers to query for PGP encryption. These public key directories allow Stormshield Data Mail to retrieve the public PGP keys belonging to the recipients of encrypted e-mails. For more information, see the section Configuring corporate directories.
Directory update	**When sending encrypted messages:** To update the trusted address book when sending encrypted messages, you must have declared an LDAP directory beforehand. For more information, see the section Configuring corporate directories. **When receiving a signed message:** Users can send their encryption certificates (their public keys) to their coworkers by sending them a signed e-mail. You can choose whether to allow recipients to manually import the certificate into their trusted address books to update them, and whether to allow the address book to be automatically updated. If you allow these operations only for known authorities, this means that the user's encryption certificate will be imported only if it was issued by an authority with a certificate already in the recipient's trusted address book.
Automatic encryption and signature with Microsoft Purview	If your company uses the sensitivity label system offered by Microsoft Purview Information Protection, you can declare these labels in your SDS Enterprise policy and associate an automatic agent action. When the user applies a label to a message, the Agent checks its presence in the policy and triggers the corresponding security action: message encryption only, message signature only, or a combination of both. To use sensitivity labels in the policy, you must know their names as defined by your company in the Microsoft Purview Information Protection configuration. For each label: 1. Enter the name (corresponding to the “Name” field and not “Display name” of the label configuration in the Microsoft Purview Information Protection product). 2. Select the action(s) that the agent should automatically trigger when the label is used on a message. The PGP encryption format is not supported by this feature. **NOTE** The sensitivity label feature only works with Office365. For more information, see the Microsoft documentation.

For more information on the advanced use of the Mail feature on the SDS Enterprise agent, refer to the section Stormshield Data Mail.

8.4.5 Configuring Stormshield Data Sign

Stormshield Data Sign makes it possible to electronically sign documents and guarantee the authenticity of signers' identities and the integrity of what these files contain.

For more information, refer to *Signing files* in the *SDS Enterprise Advanced user guide*.

To configure file signing:

- Go to **Policies** > **Features** > **Sign**, and enable the settings of your choice.

Properties	Select the file extension that will be used to identify the new file after it is signed. The original file name will be kept; only the file extension is different. The possible extensions are Stormshield Data sign (**.p7f**) or S/MIME (**.p7m**). You are advised to select the **.p7f** file extension to avoid conflict with any other tools that use .p7m files. When you select the .p7f file extension: • The icon shown below will be displayed over the right top bottom of the original file icon in the explorer. • The file cannot be read by any person using a different electronic signature tool. Use the .p7m format to validate and send files to peers who do not use Stormshield Data Sign, but other RFC 2630-compliant software.
Types of signature	Select the types of signature you wish to allow. For more information, refer to Signing files in the SDS Enterprise Advanced user guide.
Active content management	Allow or prohibit the signing of files that contain macros or dynamic fields. This is important because the layout or contents of such files can be subsequently modified after they are signed, therefore casting doubt on their integrity.
Signature process	Choose whether to force the user to always display the document before signing.
Active content detection in PDF files	Choose whether to inform the user when macros are detected in the contents of a PDF file.
Active content detection in Microsoft Word files	Choose whether to inform the user when macros or dynamic fields are detected in the contents of a Microsoft Word file.

8.4.6 Configuring Stormshield Data Shredder

Stormshield Data Shredder guarantees the permanent, irreversible erasure of data that you wish to delete. With it, third parties will not be able to recover, without your knowledge, information that you thought had been deleted.

For more information, refer to the section *Permanently deleting files* in the *SDS Enterprise Advanced user guide.*

To configure the permanent deletion of files:

- Go to **Policies** > **Features** > **Shredder**, and enable the settings of your choice.

Shredding	Enable or disable the shredding of files and/or folders.

Drag and drop	Enable or disable the possibility of dragging and dropping files and folders on the Stormshield Data Shredder icon on the Windows desktop.
Miscellaneous	• Allow or prohibit the interruption of a shredding operation. If interruptions are allowed, the user can click on **Stop**. • Allow or prohibit the use of Stormshield Data Shredder to securely empty the bin. If the option is enabled, the **Securely empty the bin** pop-up menu will appear on the Shredder icon.
Confirmation request	If the shredding request applies to several files, select the type of confirmation that you wish: • **Confirm only once for all files:** The confirmation of shredding is global. • **Confirm for each file**: The shredding confirmation applies to Individual files. During the operation, the user can still unselect the checkbox **Request confirmation for each file** to stop confirmation requests for the following files.
Access to Stormshield Data Shredder in Windows	Choose whether to add a Stormshield Data Shredder shortcut to the Windows desktop. The shortcut makes it possible to erase files by dragging and dropping them on the desktop icon.
Advanced settings	There are several options available for the encryption of read-only files. You can also customize the secured erasing mode of the files by selecting the number of bytes allowing to replace the content of the files to erase, in three successive rounds. Enter two-character hexadecimal values, separated by semi-colons. The default value is 00:FF:55. It corresponds to the value 0,255,85 in the *.json* security policy file. For more information on the file in the *.json* format, refer to the *Stormshield Data Shredder* section in the *Advanced configuration guide*.

8.4.7 Configuring Stormshield Data Share

Stormshield Data Share allows users to automatically encrypt files saved in shared spaces synchronized with online hosting services DropBox, OneDrive, OneDrive for Business, SharePoint and Oodrive. This feature depends on Stormshield Data File and cannot run without it.

For more information, refer to the section *Protecting files in synchronized shared spaces* in the *SDS Enterprise Advanced user guide.*

To enable automatic protection:

1. In **Policies > Features > Share**, select the type(s) of synchronized spaces for which you would like to enable automatic protection.
2. In the **Advanced** menu, choose whether to protect all shared space content or a selection of folders. For the second option, select **Protect only the folders below** and add the name or relative path of one or several folders (e.g., *Data\Project* to protect only the sub-folder *Project*).

3. The user can also create automatic protection rules for folders from their workstation. In this case, by default, they can choose whether or not to share the rule with other users who have access to the folder concerned. In the **Manage Shared Protection Rules** section, you can force rule sharing, disallow it, or leave the default behavior. On the user's workstation, the **Share protection rule** box will then be grayed out in the first two cases (checked or unchecked depending on the option selected) in the peer selection window, when the protection rule is created. For more information on creating and sharing protection rules, see the *Advanced User Guide*, section *Automatically protecting synchronized shared space folders* .

Stormshield Data Team does not secure collaborative workspace folders. The Team feature should thus be configured such that its menus are not displayed when a synchronized folder is right-clicked.

To exclude synchronized folders from the Team perimeter:

- Configure the `excludedFolders` parameter in the security policy's *.json* file. For more information, refer to the section *Stormshield Data Team* in the *Advanced configuration guide*.

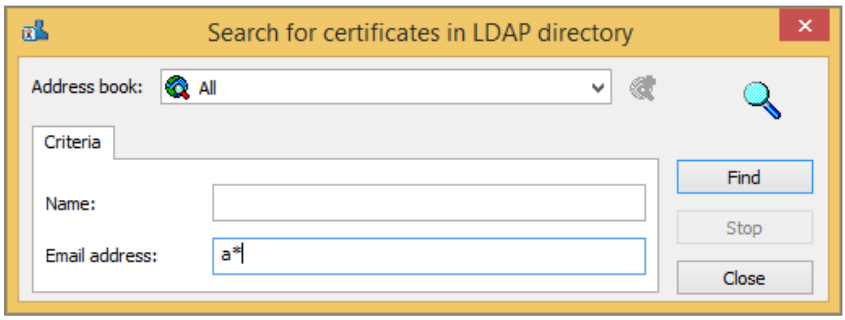
TIP
You can add a registry key so that a custom SDS Enterprise icon replaces the default Windows folder icon, making it easy to identify synchronized workspace folders protected by an automatic protection rule. For more information, see the *Advanced Setup Guide*, section Configuring advanced registry settings.

8.5 Configuring corporate directories

In a security policy, you can indicate the LDAP directories to use to provide user certificates and configure the certificate search criteria in the directory.

Directories must be added beforehand in the Certificate library menu.

From their trusted address book, users can manually search for certificates from the LDAP directories selected in the policy:



The configuration of the trusted address book and associated LDAP directories can be looked up in read-only mode from the SDS Enterprise agent.

For more information, refer to the section Managing the trusted address book from the SDS Enterprise agent.

SDMC also makes it possible to indicate the addresses of the WKD servers used to encrypt PGP messages.

8.5.1 Adding LDAP directories from the library

To add an LDAP directory:

1. Go to the menu **Policy** > **Directories** > **LDAP**.
2. If you want the certificate search in the directory to be automatically suffixed or prefixed with the "*" character, enable the first two options. This is transparent to the user.
3. Click on **Add from library** in **LDAP/LDAPS directories**.
4. Select one or more directories.
5. Change the order of directories if necessary by clicking and dragging.

8.5.2 Configuring automatic directory updates

Every time the corporate LDAP directory is updated, SDMC makes it possible to automatically update the local trusted address book to reflect changes.

The options in the **Trusted directory update** section in the **Policy** > **Directories** > **LDAP** menu enable the modular configuration of automatic updates.

Activation and execution	• **Update the directory automatically**: if this option is disabled, the options in the sections **Activation and execution** and **Updating certificates from an LDAP directory** are grayed out. • **Update frequency**: indicate a value between 0 and 24. • **Start the directory update when the user connects to the SDS account**: enable this option to update the directory every time the user logs in, regardless of the update frequency defined above.
Certificates update from an LDAP directory	Enable these options to update the statuses of certificates in the local directory.
Deletion of certificates expired/revoked/removed from the LDAP	If you do not wish to delete from the local directory certificates that have expired or been revoked or removed from the LDAP directory, you can select the issuing certification authorities to filter the certificates that you wish to delete.

8.5.3 Adding WKD servers to encrypt messages in PGP format

To enable users to send and receive e-mails encrypted in PGP format with the Stormshield Data Mail feature, you must:

- Enable PGP message encryption/decryption in **Features** > Mail in the policy.
- Add the addresses of one or several WKDs (Web Key Directories) to query in **Directories** > **PGP**. These public key directories allow Stormshield Data Mail to retrieve the public PGP keys belonging to the recipients of encrypted e-mails.

To add WKD servers:

- In the **PGP** tab in the **Directories** menu, indicate the URLs of the WKD servers by following one of the formats below, and by adapting them to the domain (or sub-domain) names of the servers:
  - **https://openpgpkey.**optional-sub-domains.domain.toplevel**/.well-known/openpgpkey/<d>/hu/<k>?**get_parameters=optional
  - **https://**optional-sub-domains.domain.domain.toplevel**/.well-known/openpgpkey/hu/<k>?**get_parameters=optional
    Sections in bold in the URLs must be maintained as they are.

SDS Enterprise communicates with WKD servers in HTTPS. All computers on which Stormshield Data Mail has been installed must therefore have the certificate from the authority that issued the SSL certificate of the WKD server.

8.6 Adding certification authorities and configuring certificate revocation control

SDMC makes it possible to add certificates from your certification authorities to your security policies, so that the SDS Enterprise agent can monitor users' certificate trust chain.

It also allows you to set up revocation control, which is the only way to indicate that a user's certificate must no longer be used. For example, if the owner of the certificate no longer belongs to a group, if the user's key may have been compromised, or if the user has obtained another certificate.

Revocation control can be performed either thanks to a Certificate Revocation List (CRL) or thanks to the OCSP protocol. In this case, the OCSP responder's URL address must be specified in the certificate.

Such data is generated by the administrator of the public key infrastructure (PKI) that the organization uses.

SDMC makes it possible to list the CRL distribution points for every certification authority that issues certificates to your users. This list is specific to each security policy.

SDS Enterprise agents download CRLs from the indicated distribution points so that the validity of users' certificates can be verified.

8.6.1 Understanding revocation control

Three aspects of a certificate are verified:

- The certificate itself: format, validity dates, signature, extension, etc.;
- The trust chain: It must be possible to establish a complete chain, up to the certificate from a trusted authority. Each certificate must meet the same level of security as the original certificate being checked. When a certificate in a chain cannot be validated, another chain is verified, until a valid chain is found.
- Revocation control. This check ensures that each certificate in the chain is not on a CRL supplied by the certification authority (or a third party that has the delegation to create CRLs). Since CRLs are also signed by a certificate, the control also checks the certificates applied at the level of the CRLs.

8.6.2 Understanding revocation lists

The CRL verification mechanism is described in the standards governing certificates and CRLs (X.509 standard, RFC 3280 and RFC 5280).

There are two ways in which SDS Enterprise agents can obtain the CRLs to be downloaded locally for certificate verifications:

- From the CRL distribution list set in the authorities' certificate settings,
- From the custom CRL distribution lists indicated for each authority, in the security policy in SDMC.

You can set the number of days CRLs will remain valid.

8.6.3 Adding the certification authority's certificates

When you add certification authority certificates in SDMC,they can be looked up in the **Authority** tab in the trusted address book on user workstations. These certificates allow the SDS Enterprise agent to guarantee that user certificates are issued by trusted authorities and to verify the validity of the certificates.

To add a certificate:

1. In **Policy > Authorities**, click on **Add from library** to the left of the panel.
2. Select one or more certificates out of the ones that were added earlier in the Certificate library menu.

The settings of certification authority certificates contain CRL distribution lists. If you wish to indicate the custom CRL distribution lists for each authority, refer to the following section.

8.6.4 Configuring revocation control in a policy

To customize the CRL distribution points for each certification authority, go to **Policy > Authorities**. You can indicate as many distribution points as you need. To download CRLs, the SDS Enterprise agent looks up these distribution points in addition to the one indicated in the certificate of each authority.

1. Indicate a CRL validity period. This is the duration after which the SDS Enterprise agent downloads CRLs again locally to ensure that they always have updated data.
2. Select a certification authority from the left side of the panel.
3. To the right of the panel, indicate one or several CRL distribution points for each selected authority. The distribution point can be accessed via the following protocols:
   - http:// or https://
   - LDAP:// or LDAPS://
   - file:///
4. Change the order of distribution points if necessary by clicking and dragging.

From their SDS Enterprise accounts, users can look up the list of certification authorities and CRL distribution points. For more information, refer to the section Looking up certification authorities from the SDS Enterprise agent.

8.7 Configuring policy distribution points

In the **Policies > Distribution** menu, indicate one or several distribution points for each security policy. These points contain the update files of policies.

When the workstation starts up, the Stormshield Data Security Enterprise agent will check the list of distribution points in the order you have set. It will apply the first valid policy that it detects; this policy must be accessible, signed and more recent than the current policy.

To configure distribution points:

1. In the **Full path to the policy file** field, enter the full path to the *.jwt* policy file of your choice. The path must begin with one of the following prefixes:

Prefix	Examples
http://	http://mycompany.example.com/folder/policy.jwt
https://	https://mycompany.example.com/folder/policy.jwt
file:	file://myserver/sharing/folder/policy.jwt file:///c:/folder/policy.jwt

2. Click on + to add the path to the list. The button is disabled if the path already exists or if the prefix is wrong.
3. Repeat the operation for every distribution point to declare.
4. Drag and drop items to change the sequence of distribution points whenever necessary. SDS Enterprise agents will analyze the distribution points in the order of their appearance in the list.

Once you have declared the distribution points, you must provide the policy update files so that they will be deployed on the SDS Enterprise agents. For further information, refer to the section Updating the security policy on SDS Enterprise agents.

9. Installing SDS Enterprise agents on the user stations and deploying the security policies

SDS Enterprise agents make it possible to apply the security policies defined in SDMC and use the product's features on users' workstations.

Follow the steps below to install SDS Enterprise agent on workstations:

1. Download the policies,
2. Sign the policies with the utility provided by Stormshield,
3. Download the SDS Enterprise agent installation package,
4. Deploy the SDS Enterprise agents on user workstations,
5. Deploy the signed security policy file and the peer certificate on user workstations.

9.1 Finding out the system requirements for SDS Enterprise

SDS Enterprise is a solution for workstations running 64-bit Microsoft Windows.

To find out which Microsoft Windows versions are compatible, refer to to the *Product life cycle section.*

If you choose to deploy the agent installation package in silent mode, the prior installation of the VSTO Runtime 4.0 Office 2010 package is required for the Stormshield Data Mail feature. The VSTO package is available from your MyStormshield client area (**Downloads** > **Stormshield Data Security** > **Enterprise** > **Tools** menu).

NOTE
Domain users cannot install the agent while authenticated in Windows with a user account if User Account Control (UAC) is enabled because privilege escalation does not function.

IMPORTANT
The SDS Enterprise agent is not compatible with the **Fast User Switching** feature.

9.2 Downloading and signing a security policy

Agent installation packages are supplied with a default security policy. You can then add your own security policy.

Before deploying a custom security policy, you must download it for it to be signed by a signatory account, to guarantee its authenticity and integrity.

Stormshield provides a utility that allows you to sign your policies.

The signature is based on the JWT standard. The default algorithm used is RSASSA-PSS SHA256 (PS256), but you can configure this.

The signature utility makes it possible to sign several policies at the same time if needed.

When the policy signatory is changed, refer to the section Modifying the signatory of a security policy.

9.2.1 Requirements

To sign a security policy, you need:

- A file in the *.p12* format containing a private signature key. We recommend that you protect the file with a strong password. For information on how to create a security policy signatory account if you are using the Microsoft public key infrastructure solution, see Creating a SDS Enterprise security policy signatory account.
- To download the signature utility *SDSPolicySignCLI.exe* from the **Downloads** menu in SDMC.

9.2.2 Download the security policy (*.JSON* format)

1. Select the **Policies** menu on the left,
2. In the list of policies, click on the icon of a policy that you want to download.
3. Click on **Download.**

9.2.3 Signing the policy

1. Run the *SDSPolicySignCLI.exe* tool in command line. To display the list of commands, type `--help`:

`-k` or `--key`	Mandatory parameter. Indicates the relative or absolute path to the folder of the *.p12* file that allows the signature.
`-p` or `--password`	Password that protects the *.p12* file. If the file is protected with a password and you do not enter the parameter manually, you will be automatically asked to enter the password (recommended method).
`-f` or `--file`	Mandatory parameter. Indicates the relative or absolute path to the folder of the *.json* file of the policy to be signed. You can indicate several files by separating them with commas or spaces.
`-a` or `--algo`	Indicate the algorithm to use to sign the policy. The possible values are `PS256` and `RS256`. By default if the parameter is not specified, the `PS256` algorithm is used. Choose the RS256 algorithm to sign a policy for agents with a version below 11.1.
`--help`	Shows help.
`--version`	Shows the version of the utility.

2. When the file is being signed, a sub-folder with the name of the policy will be created at the same location as the policy file. This folder contains the signed *policy.jwt* file. Retrieve this file to include it in the agent installation package, as shown in the following section.

EXAMPLE

```
C:\Myfolder\SDSPolicySignCLI.exe --key C:\Keys\MyPrivateKey.p12 --file
C:\Policies\Policy1.json C:\Policies\Policy2.json --algo RS256
```

Replace the names of folders and files with those on your own workstation. In this example, the two policies are signed in the *C:\Policies\Policy1\policy.jwt* and *C:\Policies\Policy2\policy.jwt* files respectively, using the RS256 algorithm.

9.3 Deploy the SDS Enterprise agent installation package and a custom security policy to user workstations

To deploy the SDS Enterprise agent installation package to user workstations, you can choose either interactive or silent installation. You can also choose the features to be deployed.

After deploying the agents, you will need to deploy the signed custom security policy file and corresponding signatory certificate to the users' workstations, in the folders shown below, so that the SDS Enterprise agents can apply your security policy.

You must hold administrator privileges on the computer in order to deploy the SDS Enterprise agent.

NOTE
Before installing the Stormshield Data Mail feature, ensure that your appliance pool uses a Windows version compatible with SDS Enterprise. For more information on compatibility, refer to the section *Product life cycle*.

9.3.1 Downloading SDS Enterprise agent installation packages from SDMC

1. Select the **Downloads** menu on the left.
2. At the top, select the *.msi* or *.exe* package in the language of your choice:
   - *.exe*: Standalone package allowing the solution and its requirements to be installed in interactive mode. The package contains a default security policy, used if you do not deploy your own security policy.
   - *.msi*: Package allowing the product to be installed in silent mode. The package contains a default security policy, used if you do not deploy your own security policy.
3. Download the package and then see the next section to deploy it.

The links on the download page redirect you to the MyStormshield client area. By default, the latest available version of the agent will be downloaded. If you wish to download a previous version, go directly to your MyStormshield space.

9.3.2 Deploying the installation package

There are two ways to deploy packages:

- Interactive mode: standalone mode using the *.exe* package. Click on the custom *.exe* package to launch the installation.
  Once you have entered the license key and accepted the license contract, you can install all the product features allowed by the license key.
- Silent mode: the installation requires no user interaction. This mode uses the *.msi* package. Refer to the requirements before installing the package. An administrator can then install the *.msi* package with the usual Windows Installer commands. If the package is not installed with administrator privileges, the installation will fail (error 1925).

To deploy the *.msi* package in silent mode, you can use the Windows Installer *msiexec* package editing tool or Microsoft Endpoint Configuration Manager.

To use the *msiexec* tool, the procedure is as follows:

1. Open a command line window as an administrator,
2. Enter the following command:

```
msiexec /qn /i "<path>Stormshield Data Security 11.5"
LICENCENUM=<licensenumber>
```

   `<licensenumber>` consists of 16 characters without spaces.
3. All the features allowed with the license will then be installed. The `REMOVE`property (refer to section Selecting the features to install) allows you to restrict the features installed.
   Once the installation is complete, SDS Enterprise will automatically run every time you start Windows.

There are several variants to the command:

- `/qn`: installation without any window,
- `/qn+`: installation with a final confirmation window,
- `/qb`: installation with a window that shows a progress bar and estimated remaining time,
- `/qb`: installation with a window that shows a progress bar and estimated remaining time, and a final confirmation window.

NOTE
The `/norestart` command is not supported. To prevent the computer from restarting, create a *.mst* with the relevant options.

9.3.3 Deploying a signed custom security policy file and corresponding signatory certificate

After deploying the SDS Enterprise agent to the users' workstations via the *.exe* package or the *.msi* package, you can deploy the following files to the workstations so that the agents apply your own security policy:

- The signed policy file named *policy.jwt*,
- The certificate (public key) with which the signature of the policy can be verified. It must be named *admin_policy.cer*.

To deploy these files in their intended folders:

1. Save the signed policy file named *policy.jwt* in the folder named *%programdata%\Stormshield\Stormshield Data Security*, or replace it if it already exists.
2. Save the certificate named *admin_policy.cer* in the folder named *C:\Programmes\Arkoon\Security BOX*, or replace it if it already exists.

9.3.4 Selecting the features to install

By default, all features allowed by the license are installed. Only Stormshield Data Share, which is a sub-feature of Stormshield Data File, is not installed.

You can choose to remove some features even if the license key allows them. You can also add Stormshield Data Share. This customization allows you, for example, to have different installation profiles while using a single license key and installation package.

- In interactive mode, select the custom installation, and click on the icon corresponding to the feature to make your choice. To add Stormshield Data Share, first click on Stormshield Data File.

- In silent mode, use the following properties:
  - `REMOVE=<valuefeature1>,<valuefeature2>` to REMOVE features,
  - `ADDLOCAL=SBoxShare` to add Stormshield Data Share,
  - `ADDLOCAL=ALL` to perform a full install.

Below is the list of possible values for the `REMOVE` and `ADDLOCAL` properties:

Feature	Value
Stormshield Data File	SBoxFile
Stormshield Data Share (the Share feature is a Stormshield Data File sub-feature, It is therefore automatically deleted if Stormshield Data File is deleted)	SBoxShare
Stormshield Data Virtual Disk	SBoxDisk
Stormshield Data Shredder (the Shredder feature requires the installation of Stormshield Data File to work)	SBoxShredder
Stormshield Data Mail	SBoxMailOutlookAddIn
Stormshield Data Team	SBoxTeam
Stormshield Data Card Extension	SBoxExtCarte
Stormshield Data Sign	SBoxSign
Stormshield Data Connector	SBoxConnector

When defining the value of `REMOVE` and `ADDLOCAL` properties, the various features should be separated by a comma and there must be no spaces.

For example, to install the *.msi* package by removing the Stormshield Data File and Stormshield Data Virtual Disk features and adding Stormshield Data Share:

1. Open a command line window as an administrator,
2. Enter the following command:

```
msiexec /i "<path>\ Stormshield Data Security 11.5"
LICENCENUM=<SBOXLICENCENUM> REMOVE=SBoxFile,SBoxDisk
ADDLOCAL=SBoxShare
```

To find out which features are installed on a workstation, right-click the icon in the taskbar > **About SDS Enterprise**, and then see **Installed components**.

NOTE
If Stormshield Data Share is already installed on the workstation, a default update to a version higher than 11.5 will not uninstall it.

9.4 Updating the security policy on SDS Enterprise agents

After the initial deployment of a custom policy to the agents, you can automatically update it in your pool by placing it on a server that acts as a distribution point.

The distribution points must first be declared in the policies. For more information, refer to the section Configuring policy distribution points.

1. Download the *.json* file of the policy that you have updated. For more information, refer to the section Downloading security policies.
2. Sign the file. For more information, refer to the section Downloading and signing a security policy.
3. Copy the file to the distribution points that you have declared for this policy.

The next time the agent starts, it will check whether a new update is available, and if so, the agent will automatically apply it.

If no distribution points have been declared, the policy can also be manually updated by replacing the policy file locally.

9.5 Modifying the signatory of a security policy

Before they are deployed on user stations with the signatory certificate, security policies are signed by a policy signatory. This guarantees the authenticity and integrity of policies.

For more information, refer to the section Downloading and signing a security policy.

Apply the following procedure to modify the signatory of a policy, e.g. if the signatory's signature is compromised or if the signatory leaves the company.

The following conditions are required:

- A security policy distribution point must have been configured. For more information, refer to the section Configuring policy distribution points.
- You need a *.p7b* file which contains the certificate of the former signatory and the certificate of the new signatory. For more information, refer to the section below Authorizing the signature of a policy by several signatories.

If you are using Microsoft's public key infrastructure solution, for information on how to obtain the certificate for a security policy signatory account, see Creating a SDS Enterprise security policy signatory account.

9.5.1 Authorizing the signature of a policy be several signatories

During the transition between two signatories, you must install a *.p7b* file containing the certificate of the old signatory and the certificate of the new signatory on the user stations. This operation must be performed before redeploying the policy signed by the new signatory. Therefore, the SDS Enterprise agent considers both certificates as being valid signatories of the policy.

1. Generate an *admin_policy.p7b* file containing both certificates concerned. For example you can use the export function in the Windows certificate manager.
2. On the user stations, install the *admin_policy.p7b* file in the installation folder *C:\Programmes\Arkoon\Security BOX*.

The *.p7b* file overwrites any *.cer* signatory certificate already present in the same folder.

9.5.2 Deploying the signed policy by the new signatory

Once the *admin_policy.p7b* file installed on the user stations, apply the following steps to deploy the policy:

1. Place the *admin_policy.cer* certificate of the new signatory in the installation folder *C:\Programmes\Arkoon\Security BOX* of the users, in the same location as the *.p7b* file and the certificate of the old signatory. The old certificate is overwritten by the new one.
2. Apply the procedure for updating a policy via a distribution point as described in the Updating the security policy on SDS Enterprise agents section.
3. Inform the users that they must accept the signatory change in the warning message displayed when logging back onto their SDS Enterprise account.
4. Once all users have accepted the new signatory, delete the *.p7b* file of the SDS Enterprise installation folder to ensure the old signatory is no longer considered as valid.

As long as the user does not accept the change of policy signatory, the warning message is displayed each time the user logs on to their SDS Enterprise account, and the connection is denied.

In the case of the SSO account type, if the user refuses to change the policy signatory, they are not automatically logged into their SDS Enterprise account when they open their Windows session. To continue using SDS Enterprise, the user must close and re-open their Windows session, and accept the change of signatory. For more information on how to use SSO accounts, see Creating a Single Sign-On (SSO) account.

9.5.3 Viewing the certificate of the policy signatory on the agent

In the properties of the SDS Enterprise agent on user stations, you can view the certificate of the policy signatory:

1. Right-click on the SDS Enterprise icon in the Windows system tray.
2. Select **Properties**.
3. In the **Configuration** tab, double-click on the **Keyring** icon.
4. Display the **Policy signatory** tab. If the signatory changes, the tab is updated automatically when the user accepts the change in the warning message displayed when logging onto the SDS Enterprise account.
5. Click on **Details** to display all the information of the certificate.

10. Creating and managing SDS Enterprise accounts on user workstations

When agents are deployed on user workstations, users need SDS Enterprise accounts in order to use the product's features.

Depending on the account types defined in the policy, accounts are created either manually or automatically:

- Password accounts: manual
- Smart card and USB token accounts: manual or automatic
- Single Sign-on (SSO) accounts: automatic with transparent authentication

Regardless of the account type, you must allow account creation beforehand in the security policy. For more information, see the section Configuring user accounts.

Creating your account may involve creating your main key(s), which will be used for securing your files, volumes and messages, and self-certifying the key so that you can use it immediately.

Once users have SDS Enterprise accounts, the product is ready for use. For find out how to use SDS Enterprise, refer to the SDS Enterprise *Advanced user guide*

10.1 Configuring the middleware required for Card or USB token accounts

To communicate with a smart card or USB token, SDS Enterprise requires the presence of middleware on user workstations.

SDS Enterprise makes it possible to use any smart card or USB token as long as its vendor provides a compatible PKCS#11 cryptographic module (standard interface).

SDS Enterprise provides the Stormshield Data Security middleware by default, but you can use others by specifying them in the security policy.

In this case, you must manually install the middleware on the users' workstations.

For smart cards and tokens by vendors that have published mini drivers with Microsoft, the Stormshield Data Security middleware provided by default can be used so that plug-and-play can be supported.

In addition, to operate the Card or USB token account type for your users, you must first install the card extension on the workstations, as described in the sections below.

The Card Extension Configurator allows you to view the middleware used by SDS Enterprise to communicate with the card or USB token. The middleware used is registered in the registry database. If required, the extension also allows you to select another middleware that you specified in the security policy.

The installation of the extension is also required for the operation of Single Sign-on (SSO) accounts. The Stormshield Data Security middleware is used for this type of account. For more information on how to use SSO accounts, refer to the section Creating a Single Sign-On (SSO) account.

10.1.1 Specifying a list of middleware in the security policy

The security policy lists the middleware that can be used by SDS Enterprise on user workstations to communicate with USB cards or tokens.

If you configure the security policy via SDMC, see Configuring generic account settings. By default, the Stormshield Data Security middleware is selected. Only one middleware solution can be selected via SDMC.

In the security policy's *.json* configuration file, you can manually specify several middleware options to use (cardMiddlewares parameter). For more information, refer to the *SDS EnterpriseAdvanced configuration guide*.

When the security policy is deployed and taken into account by the user workstations, the middleware to be used is registered in the registry. If more than one middleware is specified in the policy, SDS Enterprise takes into account, in order of appearance, the first middleware in the list that is functional on the workstation. This means that it must be available and run without errors.

The configuration information of the middleware used is written in the following registry keys:

- **HKEY_LOCAL_MACHINE\SOFTWARE\Arkoon\Security BOX Enterprise\Kernel\Components\Pkix**
  - `Pkcs11CardDll`: path to the middleware DLL,
  - `Pkcs11CardLabel`: middleware name.
- **HKEY_LOCAL_MACHINE\SOFTWARE\Arkoon\Security BOX Enterprise\Properties\NewUserWizardGP1** and **NewUserWizardGP2**
  - `eCKA_[ATTRIBUTE]`: parameters that monitor the use of various PKCS#11 attributes during communication with smart cards/USB tokens.

Each time you start SDS Enterprise, the registry tells you which middleware to use. We do not recommend that you change these values manually.

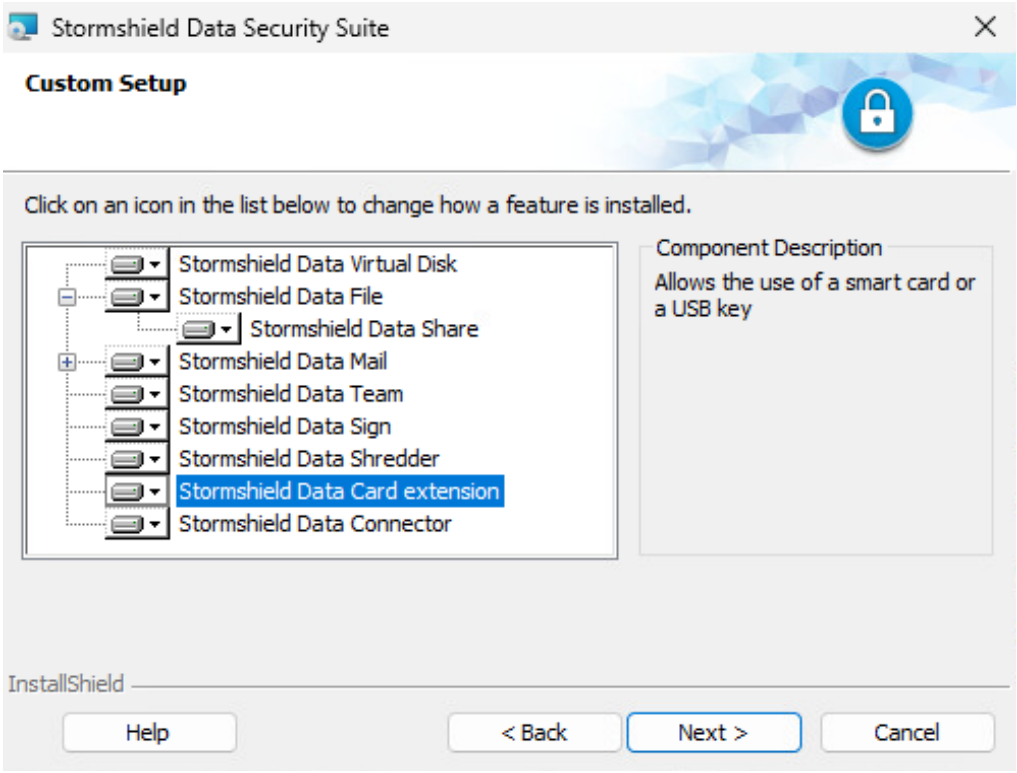
You can select another middleware to use at any time from a user's workstation. The values in the registry are then updated automatically. For further information, refer to the section Configuring log management.

10.1.2 Installing the smart card extension

The SDS Enterprise extension for smart cards and USB tokens or Single Sign-On accounts can be installed on workstations at the same time as the other features. For further information, refer to Deploy the SDS Enterprise agent installation package and a custom security policy to user workstations.

For subsequent installations, follow the steps below:

1. Open the **Start** menu in the user workstation taskbar.
2. Open the **Control panel** and select **Add/Delete programs**.
3. From the list of programs, select SDS Enterprise.
4. Click on **Change**. You will be in **Maintenance** mode.
5. Select **Modify** then go through the screens that follow.



6. Select **Stormshield Data Card extension**.
7. Complete the installation procedure.

10.1.3 Configuring the smart card extension

To open the Map Extension Configurator:

- Click on the **Start** > **Stormshield Data Security Suite** > **Card extension configurator** menu.

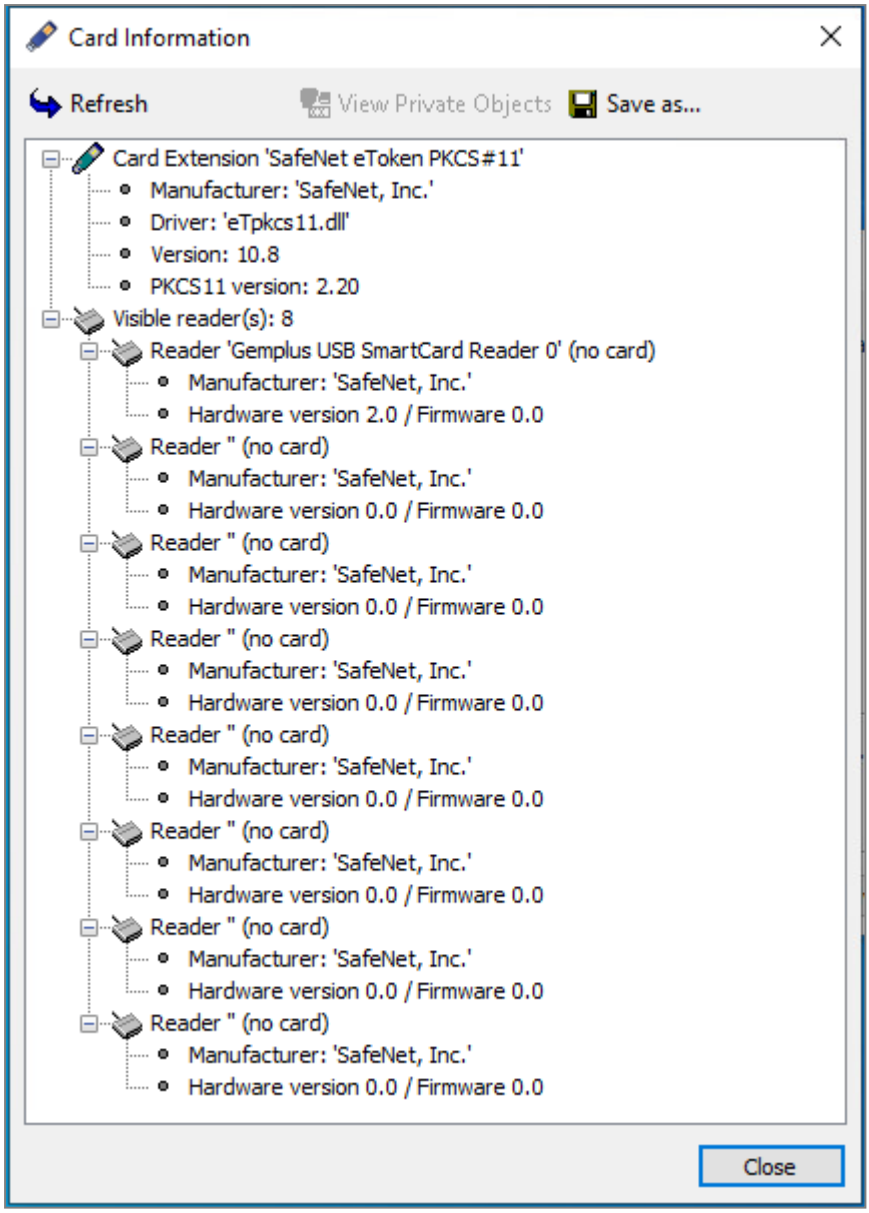
The **Card or USB stick type** menu displays the middleware used by SDS Enterprise on the workstation, as defined by the security policy.

You can select another middleware. The drop-down list shows all those specified in the security policy, in the order they appear in the policy. In this case, the middleware configuration is changed in the registry and a restart of SDS Enterprise is required.

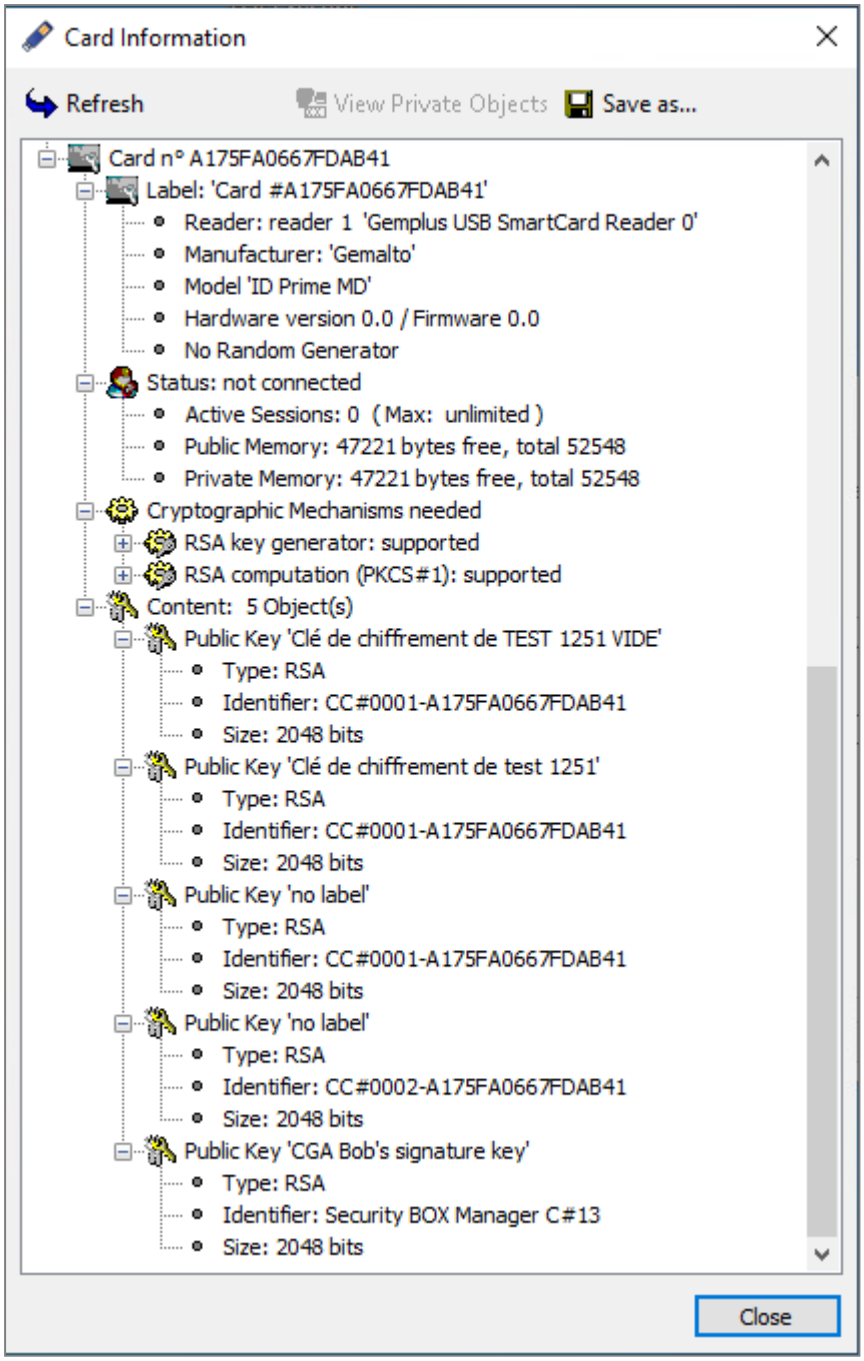
If the newly selected middleware is not available, an error is displayed.

- Click **Information** to investigate card or token access issues. The menu is used to test the *PKCS#11* interface module: the number of readers visible is indicated. If the *PKCS#11* DLL cannot be reached, an error message will indicate it. In this case, simply verify the name and path of the DLL and verify whether the required items for this DLL are present (especially other DLLs).

The following screen capture shows that the card extension exists and is configured for Gemalto smart cards. However, there are no actual USB tokens.



The following screen capture shows that a USB token is inserted and presents the USB token's characteristics as well as public objects such as public keys and certificates.



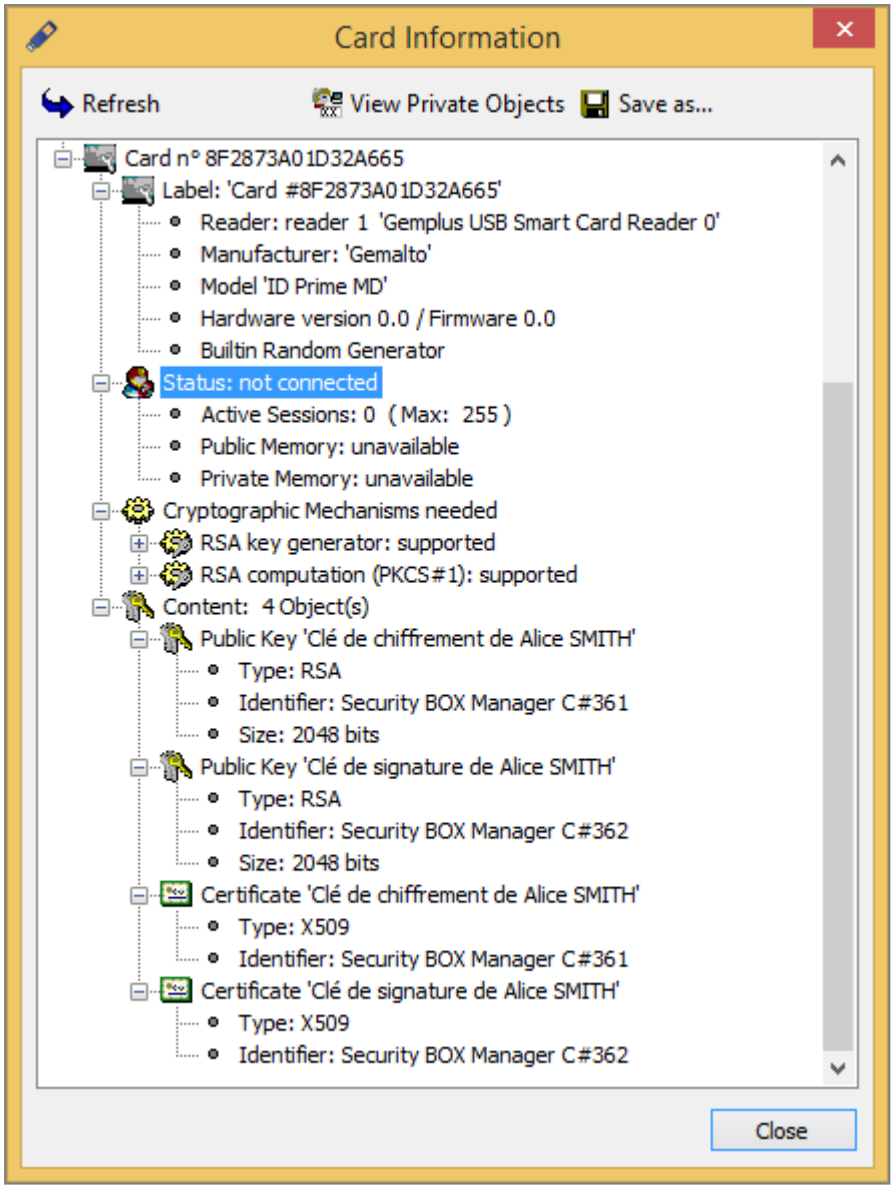
You can also select another middleware from the SDS Enterprise menu:

- By right-clicking on the SDS Enterprise icon in the Windows taskbar, then by selecting the menu **Select smart card or USB token**. The menu is only visible when no user is logged in. Unlike the Map Extension Configurator, this menu only displays the middleware installed on the workstation and functional.

10.1.4 Viewing private objects

You can view private objects (essentially private keys) in the **Card extension configurator**:

1. Click on **Information**.
2. Select the line **Status: not connected** in the information window.



3. Click on **View private objects**. This button will not be available if the previous line is not selected.
4. Enter the PIN.

The **Save as** button makes it possible to save the content of the window in a text file.

10.2 Creating smart card or USB token accounts

To create a smart card or USB token account, enable automatic account creation in SDMC so that the account creation process is transparent for the user when they insert their USB token or smart card for the first time. You can also manually create an account from the agent on the workstation.

In either case, the Stormshield Data Card Extension feature must be installed on users' workstations, with the other features from the SDS Enterprise agent. For more information, refer to the sections Deploy the SDS Enterprise agent installation package and a custom security policy to user workstations and Configuring the middleware required for Card or USB token accounts.

With a smart card or a USB token:

- Your private keys and certificates are stored on the smart card,
- The smart card will perform the calculations (signature and decryption) that generate your private keys.

When an account associated with a smart card is created, the smart card must already contain the associated private keys and certificates.

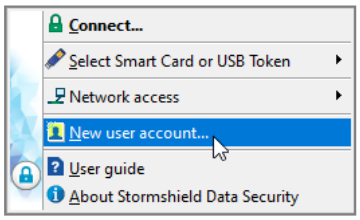
10.2.1 Creating accounts automatically

To make it easier to deploy smart card or USB token accounts and to minimize user intervention, SDS Enterprise can automatically create the user's account when the card or token is inserted for the first time. To do so, you must first install and configure the required middleware and enable the feature in SDMC. To select the appropriate middleware and enable automatic account creation, refer to the sections Configuring generic account settings and Setting account creation parameters.

The user then simply inserts their smart card or USB token. SDS Enterprise automatically detects that there is no existing account associated and proposes to create one. To continue, the user only needs to enter the PIN for the smart card or USB token, and the SDS Enterprise account is then created.

10.2.2 Creating accounts manually

1. On the user workstation, insert the USB card or token.
2. Right-click the SDS Enterprise icon in the system tray.
3. Select **New user**.



4. Select **Account with physical or virtual smart card**.
5. Click on **Create your account**.
6. Select the smart card or USB token you wish to use.
7. Enter the PIN code of the USB card or token. SDS Enterprise connects to the USB card or token and displays its contents (keys and certificates).
8. Validate the following screens. If the card or the USB token contains several usable keys, choose the desired key.
9. Check the account summary.
10. Click on **Finish**.

The SDS Enterprise account created using a smart card or USB token has the serial number of the card or token as an identifier.

10.2.3 Using keys from the smart card or USB token

In addition to the user's current keys, other encryption keys may be saved on the smart card or USB token.

SDS Enterprise automatically uses these encryption keys to decrypt documents (messages/files) when the current key cannot do it.

These keys can come from several sources:

- The user's old encryption keys. Obsolete keys may be saved on the card (with their associated certificates) to allow the user to decrypt files that were encrypted with old keys. This is particularly useful for archived files,
- External keys. For example, keys for former employees that can be used to retrieve information (files/messages).

Depending on the SDS Enterprise features, the keys on the card are not identified in the same way. For some features, the keys are identified by their CKA_ID PKCS#11 attribute (so they must always keep the same CKA_ID value), but for other features, identification is done using information from the certificate (issuer and serial number).

We recommend that keys stored on the cards always have the same CKA_ID PKCS#11 attribute and that all of the associated certificates are also present.

10.3 Creating password accounts manually

When creating a SDS Enterprise Password account, two methods are possible to allocate encryption and signature keys to the user:

- Generation of the encryption and/or signature keys by SDS Enterprise locally,
- By importing a key that was saved earlier in a file in the *PKCS#12* format, *P12* or *PFX* extensions.

The methods for managing keys as well the type of keys available depend on the configuration of the security policy in SDMC.

If you are creating an account with two keys, you can use either method to create each key.

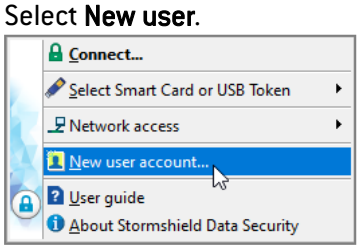
10.3.1 Generating keys

Generated keys will be used to secure files and e-mails, for example. These keys are self-certified, so that SDS Enterprise can use them immediately. However, they will not be automatically trusted by peers but can be certified later by a certification authority.

If you use two different keys, one for the encryption and the other for the signature, run the following procedure twice. It describes how to create an encryption key.

To generate a key:

1. On the user workstation, right-click on the SDS Enterprise icon in the Windows system tray.
2. Select **New user**.



3. Select **Account with password**.
4. Click on **Create your account**.

5. Enter a login and password. You will be asked to enter them to connect to SDS Enterprise.
6. Click on **Next**.
7. Select **Generate your encryption key** and select the key type.
8. Click on **Next**.
9. In the next window, generate a key from random numbers by moving the mouse or typing on the keyboard.
   Once the capture is complete, click on **Next**.
10. Enter the details that make up the user's identity, as you want them to appear on the self-certified certificate.
11. Click on **Next**.
12. Set a backup password, which you will be asked to provide if you forget the main password or if users are locked out of their accounts when they consecutively enter the wrong code too many times . For more information, please refer to the section Unblocking user accounts.
    Click on **Next**.
13. Check the account summary.
14. Click on **Finish**.

SDS Enterprise will generate the keys and create the account.

The account includes a personal self-certified certificate. Since the certificate was created by the user, it may not be trusted by some peers, who only trust certificates created by known authorities. We recommend using certified keys issued from a PKI (*Public Key Infrastructure*). If you want to use the Microsoft PKI solution, see Implementing the Microsoft Public Key Infrastructure (PKI) solution).

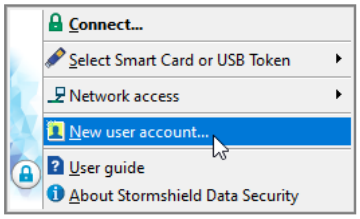
10.3.2 Importing keys

This section explains how to create an account by retrieving keys and certificates saved in a *PKCS#12* format (extensions *P12* or *PFX*).

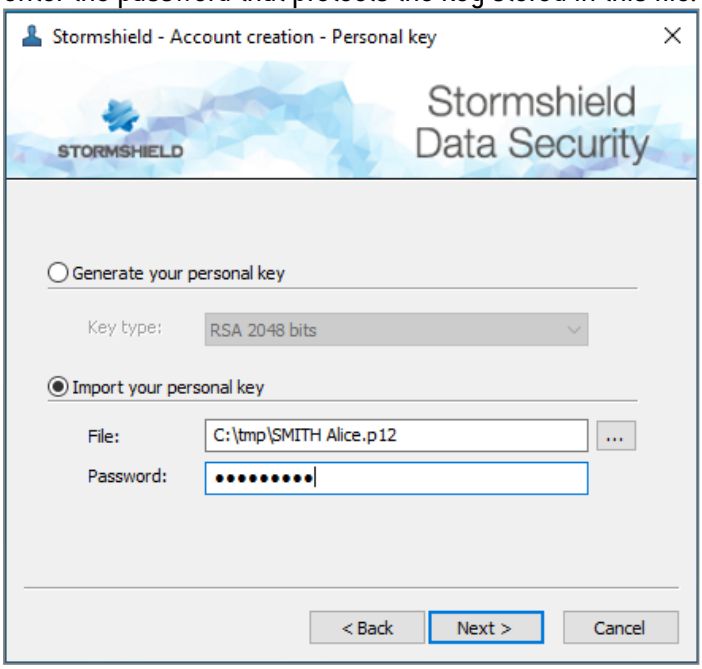
This feature makes it possible to use a previously generated key and its associated certificate, or a key generated centrally by a PKI. This feature also makes it possible to save private keys that can be used for recovery operations.

The actions described below apply to both the encryption key and the signature key.

1. On the user workstation, right-click on the SDS Enterprise icon in the Windows system tray.
2. Select **New user**.



3. Select **Account with password**.
4. Click on **Create your account**.
5. Enter a login and password. You will be asked to enter them to connect to SDS Enterprise.
6. Click on **Next**.
7. Select **Import your personal key** and:
   - select the file in *PKCS#12* format with the *P12* or *PFX* extension,
   - enter the password that protects the key stored in this file.



8. Click on **Next**.
   If the file contains several keys or certificates, select the key to be imported and the certificate associated with this key.
9. Click on **Next**.

10. Set a backup password, which you will be asked to provide if you forget the main password or if users are locked out of their accounts when they consecutively enter the wrong code too many times (three times by default). For more information, please refer to the section Unblocking user accounts.
    Click on **Next**.
11. Check the account summary.
12. Click on **Finish**.

SDS Enterprise will import the key and create the account.

10.4 Creating a Single Sign-On (SSO) account

SDS Enterprise allows users to log in to SDS Enterprise automatically and seamlessly using the SSO mode that links the SDS Enterprise account to their Windows user account. SDS Enterprise uses the encryption and signature keys stored in the Windows Certificate Store.

If you want to use Microsoft's public key infrastructure solution to generate user encryption and signature keys, see Implementing the Microsoft Public Key Infrastructure (PKI) solution.

In the security policy, the use of SSO accounts can be configured. User accounts will then be automatically created on their workstations. You can configure the security policy in the SDMC web interface or in advanced mode directly in the *.json* policy file.

This table describes the various steps involved in deploying SDS Enterprise in SSO mode. Click on a link to open the corresponding procedure in this guide.

Steps	Description
1	Observe the requirements
2	Configure the security policy in SSO mode: • In standard mode via the SDMC web interface, • In advanced mode via the policy's .json file.
3	Downloading and signing a security policy
4	Deploy the SDS Enterprise agent installation package and a custom security policy to user workstations
5	Use the SSO accounts

10.4.1 Requirements

- The Stormshield Data Card Extension feature must be installed on users' workstations, with the other features from the SDS Enterprise agent. For more information, refer to Deploy the SDS Enterprise agent installation package and a custom security policy to user workstations and Configuring the middleware required for Card or USB token accounts.
- Certificates for user encryption and signature keys must have been previously stored on workstations in the **Personal** Certificate Store via the Windows Certificate Manager.
  These certificates must have been issued by the certification authorities that were declared in the security policy, when SSO accounts were configured, as indicated in the next two following sections.

- Users must possess a private key for each of their certificates stored in the Windows Certificate Store.
- Two certificates must first be added to the SDMC Certificate Library:
  - The certificate of the certification authority that issued the user certificates,
  - The certificate of the recovery account.

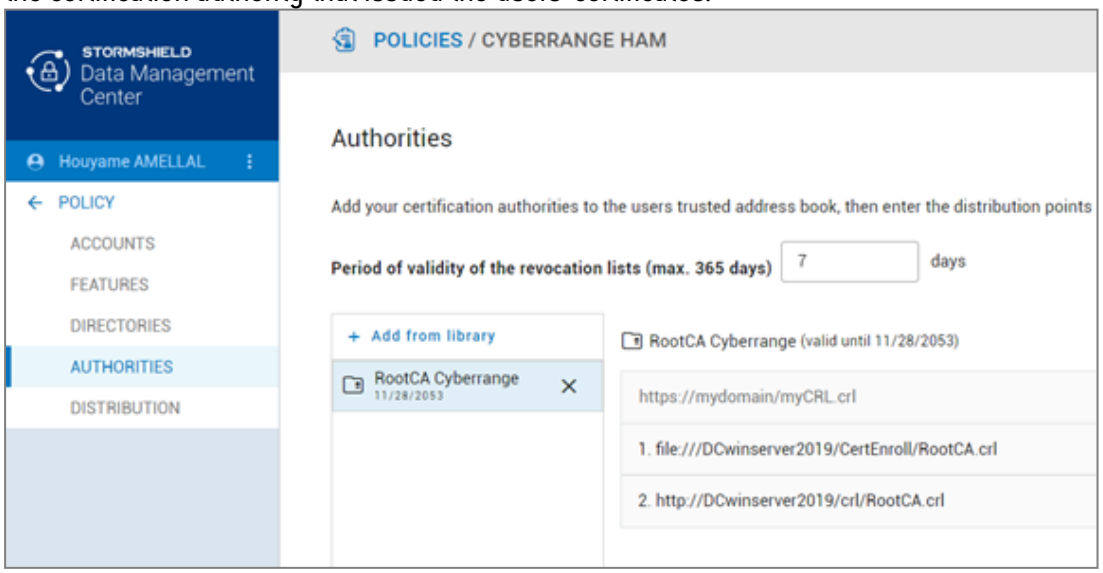
  For more information, refer to the section Adding certification authority certificates.
- Your LDAP directory must first have been added to the SDMC LDAP Library.
  For more information, refer to the section Managing LDAP directories in SDMC.

10.4.2 Configuring SSO accounts in SDMC

To set the SSO account type and ensure that users' SDS Enterprise accounts are associated with their Windows user account, configure the following options in SDMC:

1. Go to the **Accounts** menu of the relevant security policy.
2. In the **Parameters** tab, select:
   - **Account type**: Single Sign-on (SSO),
   - **Card or USB token account**: Middleware Stormshield Data Security.

   For more information, refer to the section Configuring generic account parameters.
3. In the **Creation** tab, select:
   Key management: Account with two keys (encryption key and signature key).
   Filter authorities during automatic creation: Certification authorities issuing encryption keys and user signing.
   For more information, refer to the section Setting account creation parameters.
4. In the **Data recovery** tab, add the recovery account certificate.
5. In the **Policies > Features** menu, keep the default settings or configure the various features to suit your needs.
   For more information, refer to Configuring features.
6. In the **Policies > Authorities** menu, add the path to the **.crl* revocation list file, generated by the certification authority that issued the users' certificates.



7. In the **Policies > Distribution** menu, add the path to the distribution point for the *Policy.jwt* file. This file matches the format of your security policy after signing by the policy signatory account.
   For more information, refer to the section Configuring policy distribution points.
8. Once the security policy is ready, deploy it on users' workstations as indicated in Installing SDS Enterprise agents on the user stations and deploying the security policies or Updating the security policy on SDS Enterprise agents.

Next, refer to the section Using the SSO account.

10.4.3 Advanced mode - Configure the SSO accounts in the *.json file*

To manually set the SSO account type directly in the *.json* file of a security policy, fill out the following fields:

1. Indicate SSO as the type for the "AccountMode" parameter:

```
"accountPolicy": {
        "parameters": {
                "accountMode": "SSO"
       }
}
```

2. Indicate the number of keys in the "accountKeyMode" parameter ("dualKey", "singleKeyEncryption" or "singleKeySignature"):

```
"accountPolicy": {
        "creation": {
                "accountKeyMode": "dualKey"
       }
}
```

3. In the parameters "encryptionKeyAuthorityId" and "signatureKeyAuthorityId", indicate the ID of the certificate from the authority that issued the keys to be used to create the accounts:

```
"accountPolicy": {
        "creation": {
                "automatic": {

"encryptionKeyAuthorityId": "0123456789ab-cdef-0123-4567-
89abcdef",
"signatureKeyAuthorityId": "0123456789ab-cdef-0123-4567-89abcdef"
                }

       }
}
```

4. In the "certificateData" parameter, indicate the data of the certificates mentioned in step 3 in "base 64" format:

```
"certificateData": [
        {
           "id": "0123456789ab-cdef-0123-4567-89abcdef",
           "data": "LS0tLS1CRUdJTiBDR [...] GSUNBVEUtLS0tLQ0K"
        }
]
```

5. Once the security policy is ready, deploy it on users' workstations as indicated in Installing SDS Enterprise agents on the user stations and deploying the security policies or Updating the security policy on SDS Enterprise agents.

To configure the security policy in *.json* format, refer to the SDS Enterprise *Advanced configuration guide*..

Next, refer to the section Using the SSO account.

10.4.4 Using the SSO account

Once the policy has been deployed on workstations, users' SDS Enterprise SSO accounts will automatically be created the next time they log in to their Windows accounts. They can then use SDS Enterprise without going through its connection window.

To specify a location for SDS Enterprise account files on the user's workstation, use the "primaryUserPath" and "secondaryUserPath" parameters in the *.json* configuration file. Files are saved in a sub-folder named after the current user of the Windows session. This sub-folder is itself located in an "SSO" sub-folder of the path specified by the "primaryUserPath" and "secondaryUserPath" parameters.

To configure the *.json* file, see in the SDS Enterprise *Advanced configuration guide*.

Users are automatically logged in to and out of the SDS Enterprise account every time the user's Windows session is opened and closed. The same occurs when the account is locked and unlocked.

To change the signatory of a security policy, see Changing the signatory of a security policy.

SSO accounts have the following particular characteristics:

- Connection and locking menus remain visible by clicking on the SDS Enterprise icon in the Windows task bar, but are grayed out.
- However, users can choose in the properties of their SDS Enterprise accounts > **Connection settings** > **Screensaver** tab to lock the SDS Enterprise session when the Windows screensaver begins or when the Windows session is locked, and to not unlock when session resumes. In this case, users can use the **Unlock** menu by clicking on the SDS Enterprise icon in the task bar.
- In the user's key ring, which can be accessed from the SDS Enterprise icon in the Windows task bar, the **Operations** button is not shown in the **Encryption** and **Signature** tab.

10.5 Renewing keys and certificates

When encryption or signature keys or certificates are lost, compromised or expired, please follow these procedures to renew them depending on your users' account type.

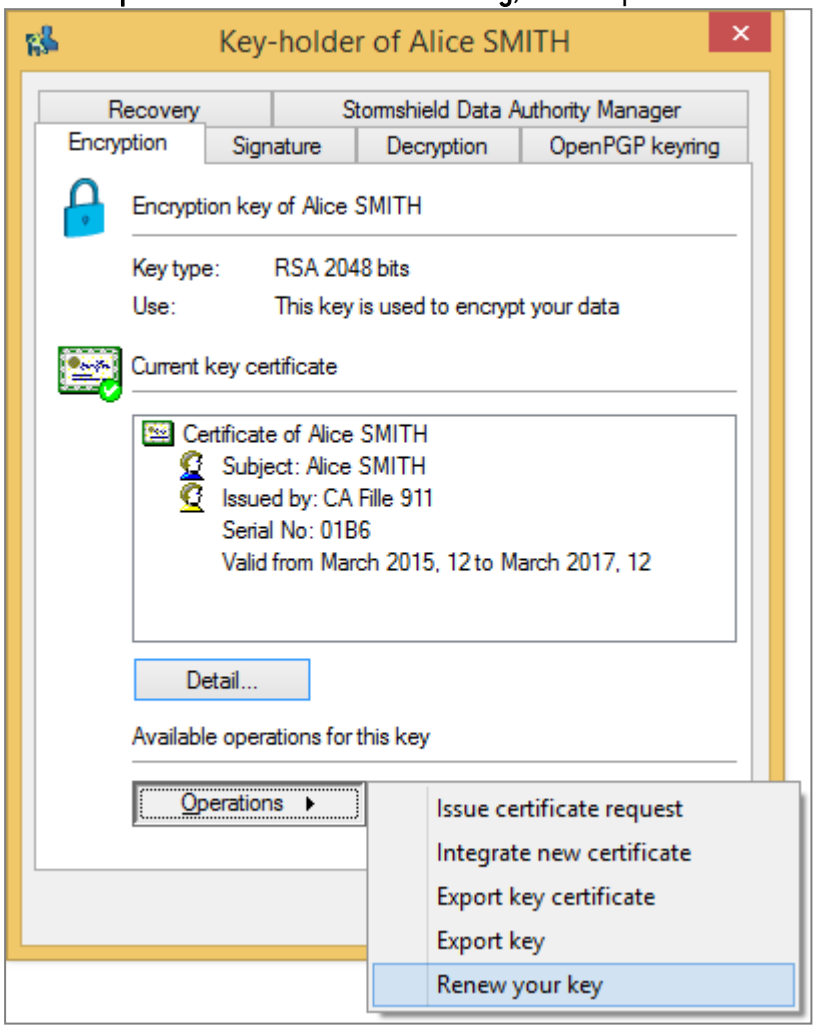
10.5.1 Password accounts

You can renew the keys of a user of a Password account to change their encryption or signature keys.

To renew keys from a user's workstation:

1. Right-click on the SDS Enterprise icon in the system tray.
2. Select **Properties**.
3. Select the **Configuration** tab.

4. Double-click on the **Key ring** icon.
   - If the user has two keys, choose the **Encryption key** or ***Signing key*** tab.
   - If the user has only one key, choose the **Personal key** tab.
5. Click on **Operations** and choose **Renew key**, then skip the introduction screen.



6. Specify how to create the encryption key:
   - To create a new key, select the option **Generate your key** and select the type and length of the key. Refer to the section Creating a Password Account Manually for further instructions.
   - To import an existing key, select **Import your key**. Refer to the section Creating a Password Account Manually for further instructions.
7. Click on **Finish**.

SDS Enterprise generates or imports the personal key and moves the old key as a decryption key so that the user can decrypt his old documents. It is visible in the user's Keyring **Decryption** tab. Signature keys are not kept.

For more information, refer to the section Decrypting a user's data with an old key or a delegation key.

10.5.2 Card or USB token accounts

To renew certificates or keys on smart cards and USB tokens, take note of the information below.

Renewing certificates

When renewing certificates on the smart card or USB token, the new certificates are effective the next time the user connects to SDS Enterprise.

When a new certificate is added, the certificate object that is created must have the same CKA_ID *PKCS#11* attribute as the old one.

The old certificate should not be deleted unless SDS Enterprise has correctly recognized the new one. You can check whether the new certificate is recognized in the SDS Enterprise agent's key ring.

Renewing keys

When renewing keys (with the associated certificate) on the card or USB token, the new keys are taken into consideration once the certificates of the older keys expire.

For an account with several keys (one for encryption and one for signing), the new keys are selected based on the use of the associated certificates.

You can check whether the new keys are recognized in the SDS Enterprise agent's keyring.

IMPORTANT
Make sure that you keep the old encryption key, even after the new key has been taken into account by SDS Enterprise.

The old key automatically becomes a decryption key and always decrypts the user's old documents. It is visible in the user's Keyring **Decryption** tab.

It is not necessary to keep the old signature key.

For more information, refer to the section Decrypting a user's data with an old key or a delegation key.

10.5.3 Single Sign-On (SSO) accounts

In SSO mode, encryption and signature keys as well as certificates can be stored in the user's Windows Certificate Store. In this case, please observe the following information.

Renewing keys

If you need to renew a user's keys in the Windows Certificate Store, proceed as follows:

1. As the key management mechanism is similar for Card and SSO accounts, start by enabling automatic key renewal in the policy's *.json* configuration file. To do this, set the enableAutomaticRenewFromCard parameter to "confirm" or "silent" in the *accountPolicy* section of the file. For more information, see the Account section of the *SDS Enterprise Advanced configuration guide*.
2. After editing their *.json* file, the user must restart their computer to ensure that the modification has been taken into account.
3. As a precaution, if you renew an encryption key, save the user's private key in a safe place, so that they can continue to decrypt their old data should the renewal procedure fail. A backup is not necessary to renew a signature key.

4. Via the Windows Certificates Manager, in the user's personal store, right-click the certificate matching the key to be renewed, and select the menu **All tasks** > **Ask for a certificate with a new key**.
   A new key and its certificate are generated and displayed in the Certificates Manager.

IMPORTANT
Do not omit to ask for a new certificate with a new key and not a certificate renewal. Indeed, the previous key will be overwritten by the new one. In the encryption, the old key must remain present in the Certificate Store to allow the user to decrypt his/her old data. **Therefore, never delete the old encryption keys.**

The SDS Enterprise agent then considers the new key once the certificate of the old key expired.

At the end of this operation, the old encryption key is added automatically as the decryption key to the **Decryption** tab in the user's keyring. Although the key is visible in the keyring, it remains stored in the user's Windows Certificate store. Therefore it is important to keep it in the Store.

For more information on the decryption key, refer to the section Decrypting a user's data with an old key or a delegation key.

After renewing a key, if you set the enableAutomaticRenewFromCard parameter to "confirm" in the policy *.json* file, the user will be asked to confirm the renewal of the key in the window that opens the next time they log on to their SDS Enterprise account.

Two different confirmation windows open if the encryption key and the signature key have been renewed.

You can check whether the new keys are recognized in the SDS Enterprise agent's keyring.

Renewing certificates

If you need to renew a user's certificate (without changing the key), you must renew it via the Windows Certificate Manager so that it remains associated with the same encryption or signature key:

- In the user's personal store, right-click on the certificate to be renewed and select the menu **All tasks** > **Advanced operations** > **Renew this certificate with the same key**.

The next time SDS Enterprise starts, the new certificate is automatically taken into account in the user's keyring.

10.6 Unblocking user accounts

If users forget their passwords or if their accounts have been blocked because they entered the wrong password too many times, their accounts can be unblocked.

10.6.1 Using the backup password

1. In the connection window, select **Unlock** to start the unlocking tool and click on **Next**.
2. Select **I know the backup password**.
3. Enter the backup password that was set when the account was created, then click on **Next**.

> **IMPORTANT**
> If you block the backup password, you will no longer be able to unblock the account.

4. Enter a new user password according to the criteria displayed and confirm it.
5. Click on **Finish**.

The account is now operational again with the new password.

10.6.2 Using the user account backup

With each successful login, SDS Enterprise makes a backup (*.bak*) of the keystore (*.usr*) and directory (*.usd*) files making up the user's account.

If the user account is blocked or corrupted, you can restore the account from its last backup.

To do so, in the folder containing the user account (configured in the security policy):

1. Rename the *.usr* and *.usd* files,
2. Make a backup copy of the *.usr.bak* and *.usd.bak* files,
3. Remove the *.bak* extension from the *.usr.bak* and *.usd.bak* files.

The user account is then reset to how it was at the time of the last successful connection.

10.7 Exporting an SDS Enterprise account

You can export a user account in a Windows Installer file which will contain all the information and files from the account.

Once the account is exported, you can either store this file to save it, or install it on another computer where SDS Enterprise is installed to install the user account.

To export the account:

1. On the user workstation, right-click on the SDS Enterprise icon in the Windows system tray.
2. Select **Properties**.
3. Select the **Wizards** tab.
4. Click on **Account export**.
5. Skip the introductory screen.
6. Click on the **Browse** icon to select the folder to which the account will be exported, and enter the name of the file to be created.
7. Click on **Next**.
8. Check that the summary corresponds to the account you want to export, and click Finish. SDS Enterprise creates a *.usi* file in the location you indicated, and provides a final summary.

10.8 Exporting a security key

You can create a file to export a security key (public key and private key), with its certificate and any trust chain.

For an account with two keys, you can export each key individually.

By saving this file, you can:

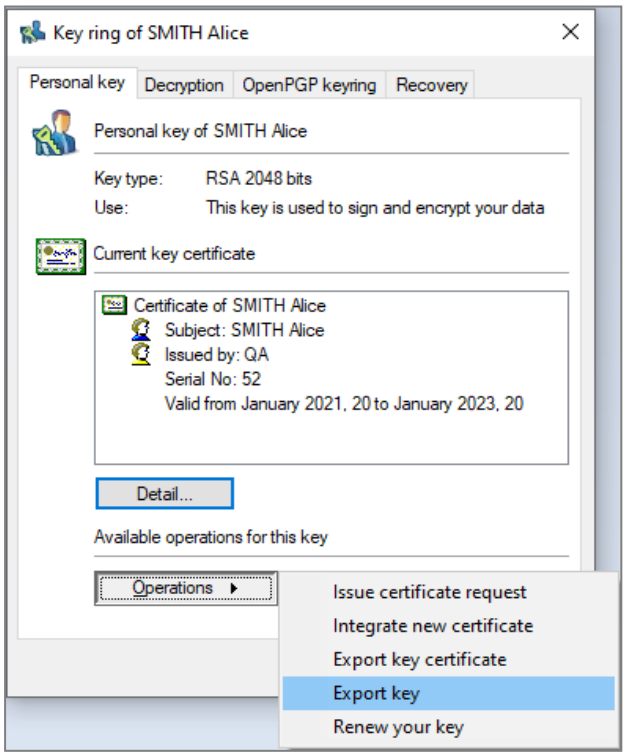
- Create a new account using the current key,
- Use this key in any application that can import security keys.

This will be useful for delegated decryption keys (see Decrypting a user's data with an old key or a delegation key). This is also useful if you want to decrypt files or information previously encrypted with this key.

The file containing your key is generated in *PKCS#12* format (extension *.p12* or *.pfx*). If the user has two keys, each key will be exported in a separate file.

To export a key:

1. On the user workstation, right-click on the SDS Enterprise icon in the Windows system tray.
2. Select **Properties**.
3. Select the **Configuration** tab.
4. Double-click on the **Key ring** icon.
   - If the user has two keys, choose the **Encryption key** or ***Signing key*** tab.
   - If the user has only one key, choose the **Personal key** tab.
5. Click on **Operations** and choose **Export key**, then skip the introduction screen.



6. Select one of the following two options. You can tick both options.

- The **Provide certificate trust chain** to associate the key with the certificate of the authority (ies) that certified the key.
  Only the certificates found in the trusted address book will be listed. No LDAP search will be performed.
- The **Provide former key certificates** option if the user renewed one or several certificates but wishes to decrypt documents which were encrypted with the previous certificates.
  You can select both options.

7. Enter the name of the file to be created, and proceed to the next screen.
   The **Save as** button enables you to browse folders in order to set the target file. However, the keys are not yet exported.
8. Enter a password to protect the file: this will allow you to encrypt the key in the generated file.

> **NOTE**
> The password must be at least eight characters long and contain either a number or an interpunction. If this is not the case, the export is denied.

9. Proceed to the next screen, check the summary, and click on **Finish**.
   The key has been exported into the indicated file.

10.9 Decrypting a user's data with an old key or a delegation key

With the help of decryption keys, SDS Enterprise makes it possible to decrypt files and messages transparently when they are encrypted by a key other than the user's current key.

SDS Enterprise allows two types of decryption keys:

- Former private keys. When users renew their encryption keys (or personal keys), their former keys are automatically moved to a location where all their former decryption keys are kept,
- Delegation keys. These are encryption keys that coworkers can share with other users, to allow them to decrypt documents or messages that were encrypted for their use.

10.9.1 Setting up delegated decryption

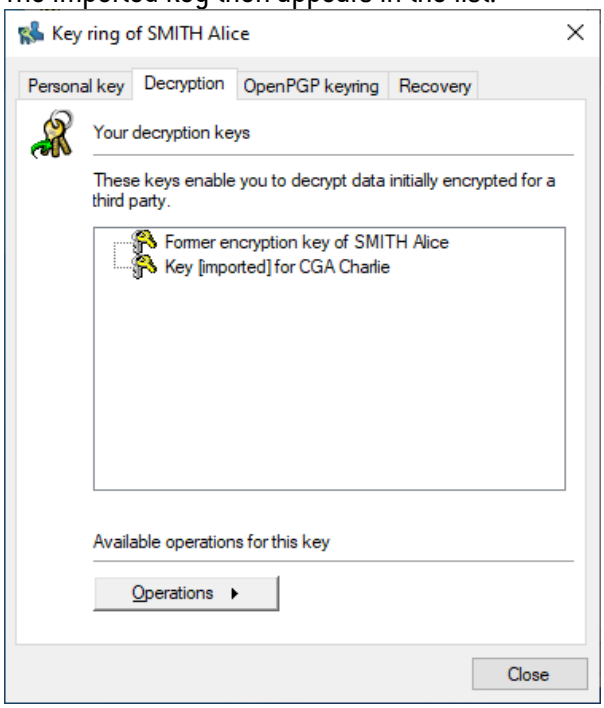
Delegated decryption consists of allowing User A to decrypt messages or files encrypted for User B in the latter's absence. To do so, User A must be given User B's encryption key.

With this encryption key, User A can only decrypt messages. To ensure that User A can sign on behalf of User B, we recommend using separate keys for encryption and signature.

To set up delegation, User B must export their encryption key from their SDS Enterprise account, which User A must then import into their own SDS Enterprise account by following the steps below:

1. User B logs in to their SDS Enterprise account by clicking on the icon in the task bar .
2. They then double-click on the **Key ring** icon.
3. In the **Encryption** tab, User B selects the **Operations** > **Export key** menu.
4. User B then sends the exported file to User A.
5. User A logs in to their SDS Enterprise account.
6. They then double-click on the **Key ring** icon.

7. In the **Decryption** tab, they select the **Operations** > **Import key** menu.
8. They then indicate the name of the file containing the key to be imported and the password. SDS Enterprise displays a list of certificates present in the file, that is the certificate associated with the key contained in the file and its trust chain.
9. To view a certificate from the list, the user can click on it.
10. User A selects the certificates in the trust chain if they wish to import them into their trusted address book, then proceeds to the next screen.
11. They then choose the type of key to import (delegation or former key), then continue to the next screen.
12. They click on **Finish** once they checked the result of the operation.
The imported key then appears in the list:



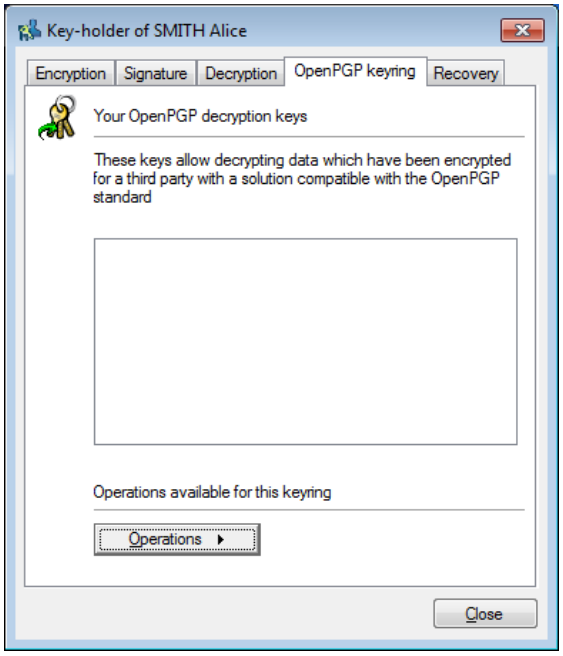
13. The user can right-click on a key in the list to rename it, display its properties or delete it when delegation is no longer necessary, for example.

NOTE
Keys imported this way cannot be exported by the person who received the key. In other words, the delegated people cannot forward the delegation.

10.9.2 Decrypting OpenPGP messages

SDS Enterprise also manages decryption keys for messages in OpenPGP format. These keys are used by the Stormshield Data Mail feature to read messages secured by PGP and GnuPGP applications, or any other application compatible the OpenPGP format.

When the Stormshield Data Mail is installed on the machine, the **OpenPGP keyring** tab in the properties of the user account will make it possible to manage these keys.



To import an OpenPGP keyring:

1. On the user workstation, right-click on the SDS Enterprise icon in the Windows system tray.
2. Select **Properties**.
3. Select the **Configuration** tab.
4. Double-click on the **Key ring** icon.
5. Select the **OpenPGP keyring** tab.
6. Click on **Operations** then on **Import a keyring**.
7. Select a file in OpenPGP format (*.gpg*, *.pgp*or *.asc*). The file may contain several keys.
8. Enter the password that protects the file.

10.10 Decrypting a user's data with a recovery certificate

The recovery certificate secures the use of a strong encryption solution. If a user loses access to their account and has not saved the encryption key, a recovery certificate ensures that the user can still decrypt the data. For example, if coworkers leave the company without decrypting all their data, this data can be recovered in plaintext.

WARNING
The recovery certificate may come from another SDS Enterprise account from which the public encryption certificate will have been exported. Due to the fact that this recovery key is highly sensitive and because of the use of this key, it is essential that this recovery account be protected.

10.10.1 Looking up recovery certificates

To look up the recovery certificates used for any encryption operation on the SDS Enterprise agent:

1. From the Windows task bar on the user workstation, right-click on the SDS Enterprise icon .
2. Select **Properties**.
3. Select the **Configuration** tab.
4. Double-click on the **Key ring** icon.
5. Select the **Recovery** tab. The certificates shown in the list are from the security policy. For more information, see the section Enabling data recovery.

10.10.2 Using a recovery certificate to decrypt data

Recovery certificates from an SDS Enterprise account or other external source can be used.

- If the recovery certificate was generated from an SDS Enterprise account, use this account to decrypt data.
- If the recovery certificate came from another source, export the private key and its certificate from this source in *PKCS#12* (*.P12*) format.
  Next, create an SDS Enterprise account using this *.P12* file and its associated password, then use this SDS Enterprise account to decrypt data. For more information on creating accounts, refer to the section Importing keys.
  You can create an account with only the decryption function.

You can use the recovery certificate to decrypt all information encrypted by the original owner of the certificate, or encrypted for the original user by a coworker using the same certificate. However, you cannot decrypt information received from an external source (for example received e-mails) as they were not encrypted with the recovery certificate.

11. Managing the trusted address book from the SDS Enterprise agent

The trusted address book allows you to save and use certificates from your users (and authorities). This address book is protected and only the user can edit it. It is considered “trusted” because all the certificates on it are considered valid by SDS Enterprise.

SDS Enterprise allows you to import user certificates from an LDAP directory into the trusted address book. To declare an LDAP directory in a security policy, refer to the section Configuring corporate directories.

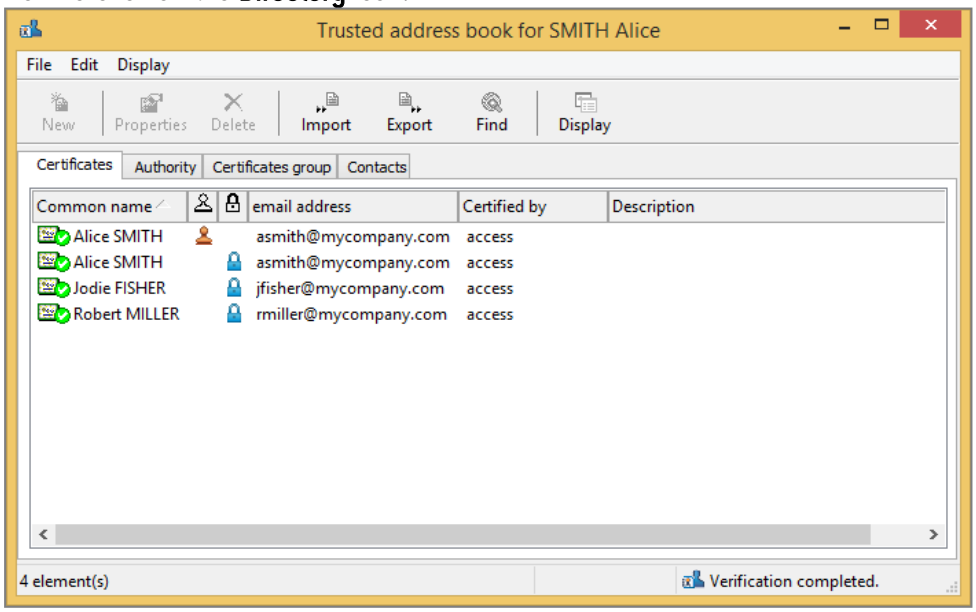
11.1 Looking up the trusted address book and managing certificates from the SDS Enterprise agent

The SDS Enterprise agent's **Directory** menu makes it possible to look up the contents of the user's trusted address book, or import or export certificates. The configuration of LDAP directories associated with the trusted address book can also be looked up.

11.1.1 Opening your trusted address book

To open your trusted address book from a user's workstation:

1. Right-click on the SDS Enterprise icon in the Windows system tray.
2. Select **Properties**.
3. Select the **Configuration** tab.
4. Double-click on the **Directory** icon.



The *Certificates* tab displays users' personal certificates, i.e., certificates that are not issued by a certification authority.

The *Authority* tab displays authority certificates, i.e., certificates that have the X.509 extension indicating that they are authority certificates (see Note below on X.509 v1 certificates).

The *Certificate group* tab displays certificates that group several certificates at once, i.e., encryption for a group of persons with a single certificate.

The *Contacts* tab allows you to create shortcuts towards certificates located in an LDAP directory.

The validity of a certificate is shown by the icon on the left. All icons are shown in the following table.

	valid	expired, or not yet valid	invalid
user certificate			
authority certificate			

For non-authority certificates, two columns show whether the certificate has been authorized for signing and/or encryption:

- the certificate is authorized for encryption
- the certificate is authorized for signing

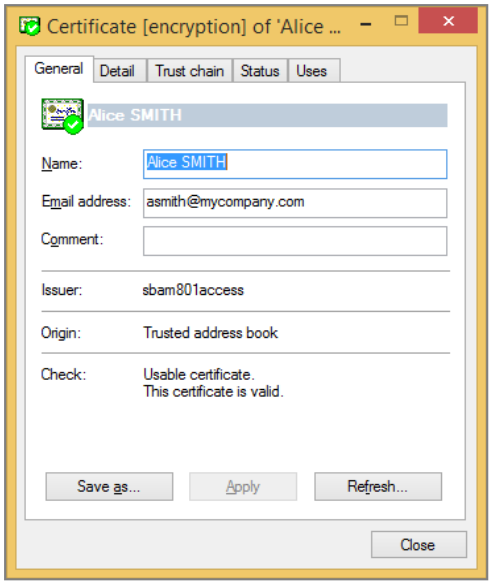
To change the display of certificates, click on the Display button or select the Display>Presentation menu.

NOTE

- an X.509 v3 certificate is an authority certificate if it has a specific extension ("BasicConstraint"). This extension can include the full length of the certification chain belonging to this certificate.
- some authorities use root X.509 v1 certificates (Verisign for example), a version that does not support the above extension. SDS Enterprise treats all self-certified X.509 v1 certificates as authority certificates. These certificates can be used by various SDS Enterprise features for encrypting and signing. There is no way to find out how they are used and the fact that they are explicitly authority certificates. You are however advised against using such certificates.
- SDS Enterprise does not use X.509 v2 certificates.

11.1.2 Displaying certificates

To display a certificate, double-click on it or select it from the list and click on the **Properties** button.



The **General** tab displays a summary of the certificate's contents:

- The name and e-mail address of the holder,
- Comments that you can update as required (they are not part of the certificate),
- The name of the certification authority,
- The origin of the certificate (trusted address book, LDAP, e-mail),
- The state after a verification check. If needed, a message indicates the error or warning.

From this window, you can also export the certificate, using the Save as button.

The **Detail** tab displays the contents of the certificate.

For information on the various fields displayed, see the X.509 v3 standards, or the RFC 3280.

If an error or warning appears, the same explanation message will appear in this window immediately after the first line.

The Trust Chain tab rebuilds and displays the certification chain, and shows the results of checks carried out on the chain.

NOTE
Only the trusted address book will be queried if you search for certificates involved in this trust chain. No LDAP searches are performed for this chain.

You can click on certificates in the chain to see their contents.

11.1.3 Importing certificates

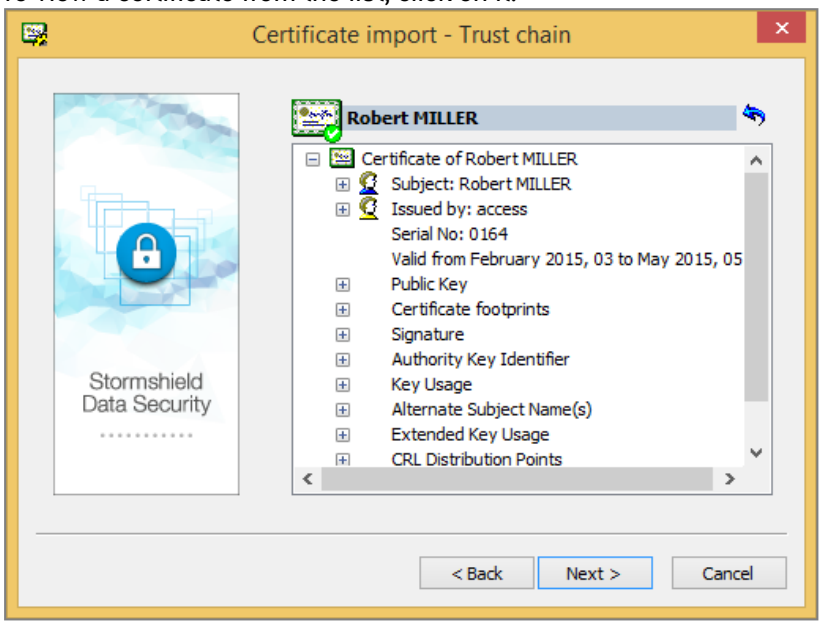
You can import the following into your trusted address book:

- Certificates only, saved as binary files (*.cer* extension) or a base 64 file (*.crt* extension),
- Lists of certificates saved in PKCS#7 format (*.p7b* or *.p7c* extension),
- A full backup of your address book (*.p7z* extension),
- Certificates from an LDAP directory.

Importing certificates from the workstation

To import certificates, you can either use the wizard or drag and drop them.

1. Click on **Import** in the trusted address book main window, or drag and drop a certificate or list of certificates from the Desktop or the Windows Explorer.
2. Enter the name of the file that contains the certificate(s) you want to import, and proceed to the next screen. SDS Enterprise displays all the certificates held in the file.
3. To view a certificate from the list, click on it:



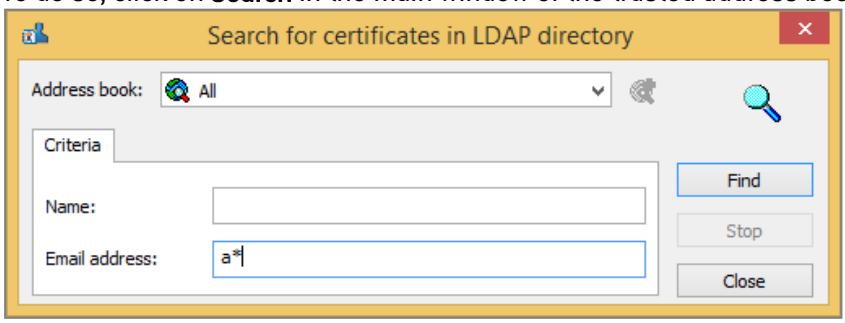
Files are checked when they are imported. The check results in a green, yellow or red mark in the certificate icon. Regardless of the status, the result does not block the import; it is possible to import invalid certificates.

4. To return to the list of certificates, click on .
5. To check whether a certificate belongs to a user, contact the user and check the hash shown.
6. To import one or more certificates from the list, select them and click on **Next**; check the summary, and click on **Finish**.

Importing a certificate from an LDAP directory

SDS Enterprise allows you to import a peer's certificate into the trusted address book from an LDAP directory:

1. To do so, click on **Search** in the main window of the trusted address book.



2. Enter the address of the LDAP server to be searched and the search parameters: name and/or e-mail address. You can include generic characters such as "*" or "?" in your search parameters if the directory you are searching accepts them.

3. Click on Search now to launch the search. The results are displayed. SDS Enterprise only displays certificates found in the directory, that are valid (according to the validity period) and which can be used for encryption or electronic signatures.
4. To display the details of a certificate, select it and click on Preview.
5. To import one or more certificates into the trusted address book, select the certificate(s) and click on **Import**.

The LDAP directory(ies) available in this window were declared beforehand in the security policy in SDMC. For more information, see the section Configuring corporate directories.

11.1.4 Exporting certificates or the trusted address book

If a user has certificates in their trusted address book that some peers do not have, the user share these certificates by exporting them.

You can export certificates using the wizard, or by dragging and dropping them.

If you want to export certificates groups, see section Exporting a certificates group.

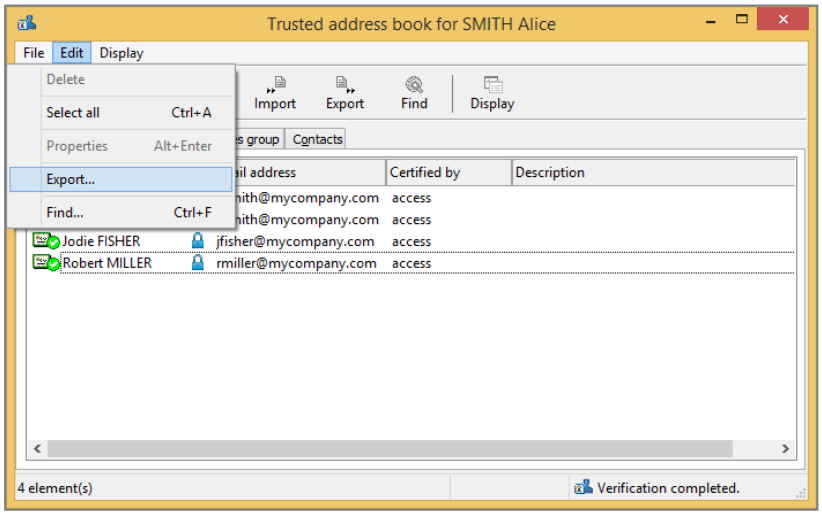
You can also export an entire trusted address book in a SDS Enterprise file with the extension *.p7z*.

The export will include all certificates, any custom settings, certificate groups and contacts' certificates.

Exporting via the wizard

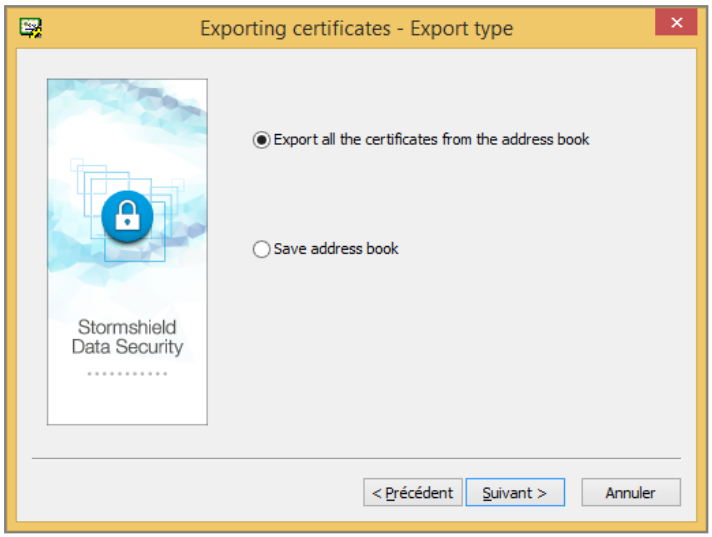
To export one or several certificates from a trusted address book:

1. Select them in the address book.
2. Click on **Export** or select the **Edit** > **Export** menu.



Continue to the next screen.

3. Choose the export type.



According to the elements you have selected in the address book, the text of the first option changes:

- **Export all the certificates from the address book**: this option is available when no certificate is selected in the address book. In this case all the certificates will be exported in a *.p7b* or *.p7c* file.
- **Export the selected certificates**: this option is available if several certificates or groups are selected in the address book. In this case only the selected certificates will be exported in a *.p7b* or *.p7c* file.
- **Export the selected certificate**: this option is available when only one certificate is selected in the address book. In this case the selected certificate will be exported in a *.cer* or *.crt* file.

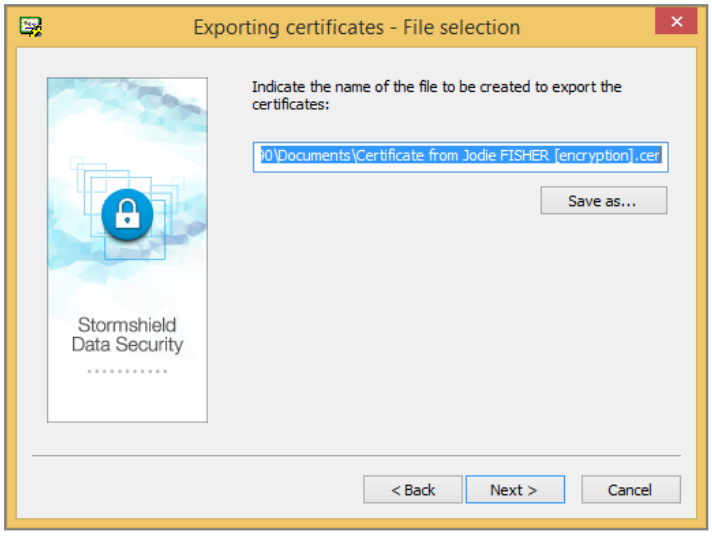
The **Save address book** option allows in any case to save all the certificates of the address book with their customized information if any.

4. If you have selected the first option of the **Export type** window and only in this case, the **Options** window opens. Additional elements can be added to the export file:
   - **Include parent-child relationship**: allows exporting the certificate's trust chain. In this case, any authority certificates that are shared are not duplicated.
   - **Include groups and contacts**: allows including groups and contacts certificates in the export file. If you want to export groups, see section Exporting a certificates group.

   This check box is checked by default when groups are selected in the address book. It is also unavailable to avoid unchecking it and generating an empty export file.

> **NOTE**
> If this option is checked whereas no group is selected in the address book, all the groups will be exported.

5. Enter a name and location for the export file. The assistant provides a default name, according to the selected export type. You can also directly type the information in the edit box or click the **Save as** button.



> **NOTE**
> The file extension is automatically changed if the extension chosen is not the right extension for the selected export type.

6. Check the information on the summary page before starting the export.
7. The selected certificates have been exported in the indicated file. You can send the resulting file by e-mail, USB token, shared file, etc., or use it to restore the content of your address book (*.p7z* extension required).

Exporting via drag and drop

You can also export certificates using the drag and drop feature in your trusted address book.

1. Select the certificate(s) you want to export.
2. Keeping your left mouse button down, drag the certificates to your desktop, or to a folder in Windows Explorer, or to an application that can receive such a file.

If only one certificate is exported, the file will be named <CommonName>.cer. It is not possible to select another name or another format. The name does not distinguish between signature certificates or encryption certificates.

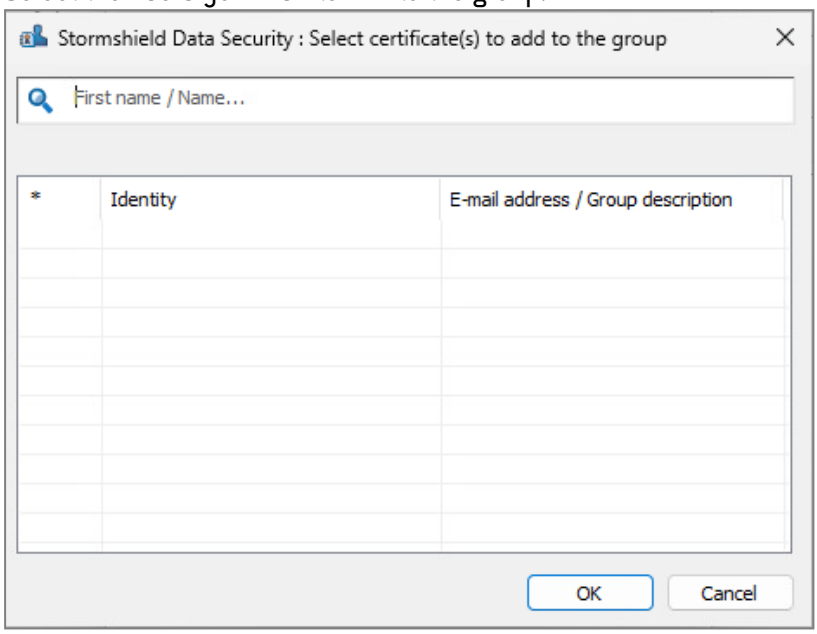
If several certificates are exported with drag and drop, the resulting file will be named *Certificate_List.p7b*. It is not possible to select another name or another format.

11.1.5 Creating a certificates group

Creating a group of certificates simplifies the encryption for fixed groups of recipients. Instead of selecting each recipient, you can select a predefined group. If you use a group to encrypt a document, the document will be encrypted for every member of the group that has a valid certificate.

SDS Enterprise accepts only groups saved in the trusted address book. You cannot use or import groups from an LDAP directory.

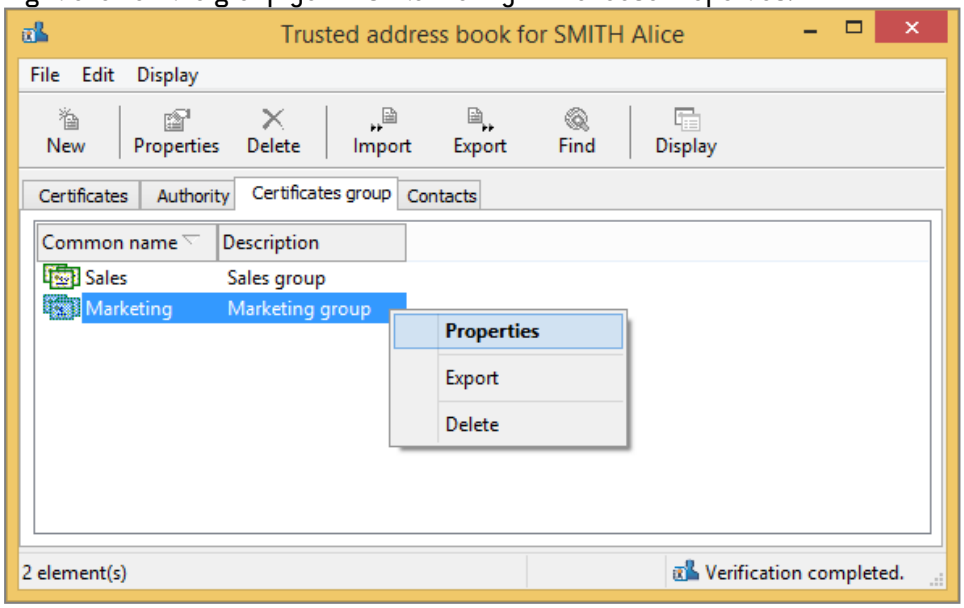
1. To create a group of certificates, choose the **Certificate group** tab in your trusted address book.
2. Right-click in the window and choose **New**.
3. Enter the information on the group and click on **Add** to add certificates.
4. Select the users you wish to add to the group.



5. Click **OK** when you are done.
6. Click **OK** to close the window.

11.1.6 Modifying a certificate group

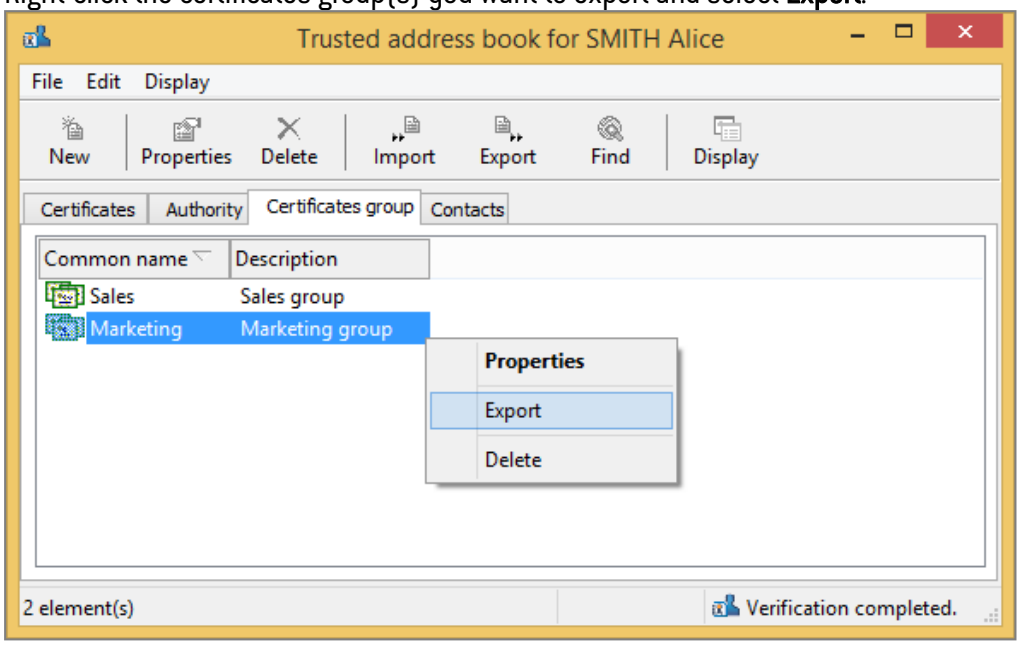
1. Choose **Certificate group** in your trusted address book.
2. Right-click on the group you wish to modify and choose Properties.



3. Add or remove certificates.
   You can also modify the group name and description.
4. Click OK to confirm your changes.

11.1.7 Exporting a certificates group

1. Right-click the certificates group(s) you want to export and select **Export**.



   Several groups can be selected for export. In this case, all the certificates in the groups will be exported. If the same certificate appears in more than one group, it will only be exported once.

2. The following steps are the same for exporting certificates. Refer to the section Exporting certificates or the trusted address book.

11.1.8 Deleting a certificate group

1. Select the group from the list of groups in the trusted address book.
2. Right-click on the group you wish to remove and click on **Delete**.

Use the usual Windows keys to select several groups (Shift + Ctrl).

To delete all groups, right-click without selecting any group in particular and click on **Select all**, then click on **Delete**.

11.2 Exchanging certificates via Stormshield Data Mail

In practice, certificates are seldom exchanged between users. LDAP directories are generally used to share certificates between peers. Manual exchanges are used only when sharing certificates with colleagues outside a company, or for test purposes.

Certificate exchange procedures differ depending on whether you use Stormshield Data Mail. If you do not have Stormshield Data Mail, you will need to use the certificate export/import procedures described in Looking up the trusted address book and managing certificates from the SDS Enterprise agent, and then send your certificate file by any appropriate means of communication.

By signing a message, Stormshield Data Mail facilitates certificate exchanges by automatically attaching signature and encryption certificates (and their entire trust chain) to secure messages.

NOTE
Self-signed certificates are not attached to signed messages.

To exchange certificates by sending a message, follow the procedure below:

1. In Microsoft Outlook, if peers have shared their certificates by signing a message with SDS Enterprise, in the lower Stormshield Data Security banner, click on **Import certificates**.
2. Certificates are then imported and your trusted address book is up to date. The link will no longer appear in the lower banner.

If an error occurs, refer to the security report. For more information, refer to *Securing e-mails* in the *SDS Enterprise Advanced user guide*.

11.3 Working offline

SDS Enterprise verifies the physical connection to the local corporate network.

When the user is connected to the network (online), every time the user searches the LDAP directory for a certificate, certificates found as a result of the search are saved in a local temporary file (cache).

When the user is disconnected from the network (offline), SDS Enterprise detects that the network is missing and searches for certificates in this local cache.

This mechanism makes it possible to encrypt files and e-mails sent to your coworkers even when the user is disconnected from the corporate network, as long as each coworker's certificate has been previously used at least once.

Certificate revocation lists are also downloaded online and cached locally in a file that the user can consult even offline.

SDS Enterprise makes it possible to force offline mode if necessary, for example if there are local network problems. To do so:

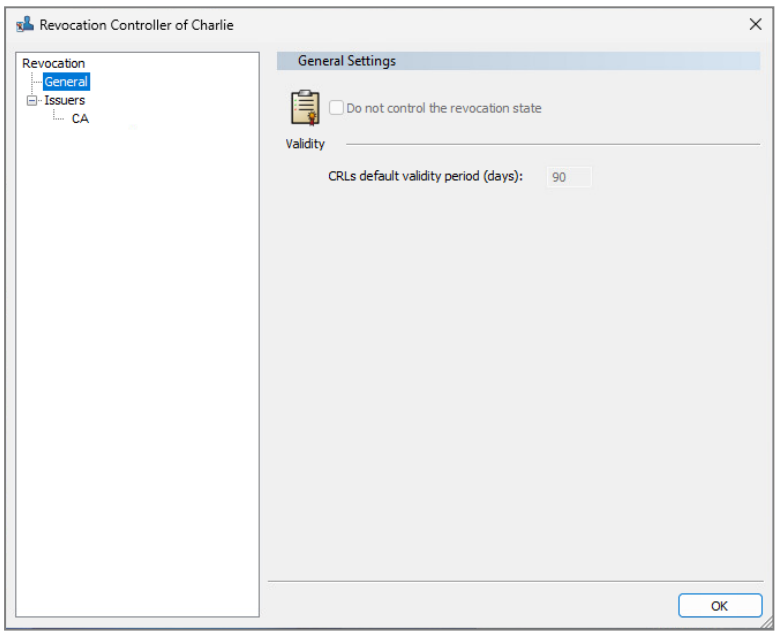
1. Right-click on the SDS Enterprise icon in the task bar.
2. Select **Network access** > **Work offline**.
3. Unselect **Network access** > **Reconnect automatically.**
4. When you re-enable **Reconnect automatically**, SDS Enterprise automatically detects the network connection and switches back to online mode.

12. Looking up certification authorities from the SDS Enterprise agent

From the SDS Enterprise agent, the revocation controller makes it possible to look up the certification authorities that issue user certificates, as well as the certificate revocation list (CRL) distribution points for each authority.

To display the revocation controller on user workstations:

1. Right-click on the SDS Enterprise icon in the Windows system tray.
2. Select **Properties**.
3. In the **Configuration** tab, double-click on the **Revocation** icon.



The revocation controller is in read-only mode. To configure user certificate revocation, specify the certification authorities in the security policies, as well as any associated CRL distribution points. For more information, refer to the section Adding certification authorities and configuring certificate revocation control.

12.1 Downloading a CRL

- To download a CRL from the revocation controller, right-click on the name of the authority under **Issuers**, and select **Download**.

> **NOTE**
> Manual downloads are generally used for users that only rarely have access to the company's network. In this case, they need to download the CRLs when they can.

12.2 Deleting an authority

You can delete authorities from the issuer list.

- Select the authority from the list of **Issuers** and click on **Delete**.

This does not affect the performance of the product and is used only to clean up the list of authorities.

13. Configuring and using the agent's advanced features

This chapter contains all the technical information (tips, limitations, and warnings) about the agent's features.

13.1 Stormshield Data Virtual Disk

13.1.1 Recovering a volume

Recovering a volume with a container file

The physical medium for a secure volume is a container file (*.vbox* extension) that contains:

- The cryptographic components required for mounting the volume: the volume's symmetric encryption key is protected with the public key for each authorized user and with each recovery key,
- The content belonging to the volume: files stored in the volume and file system.

The cryptographic components are always saved in a backup file: *.vboxsave* extension when the volume is created and again with each modification to the user list.

Recovering a Stormshield Data Virtual Disk volume is identical to changing the owner, as described in the product user manual. Basically, the user requesting a change in ownership is not the initial owner but the user whose encryption certificate has been defined as the recovery certificate.

Therefore, recovery consists of defining a new user as the owner of the volume. The new owner can then perform all the chosen operations.

Recovering a volume without a container file

However, for a simple ownership change, a recovery can be launched without a container file, only with the VBOXSAVE volume.

This procedure is particularly useful for remote recovery operations. The user with the container file does not need to send the entire container file so that the recovery can be launched, and only needs to send the *.vboxsave* file.

For this, users who want a recovery must send the *.vboxsave* file to the administrator in charge of recovery. The administrator proceeds in the same way as for changing the owner, then send back the *.vboxsave* file to the user who made the request. They only have to update the *.vboxsave* file and continue the ownership change procedure as if they had updated the *.vboxsave* file themselves.

13.1.2 Unmounting a volume by force

We advise against unmounting a Stormshield Data Virtual Disk volume "by force" or when there are open files in it. If such an operation is necessary, we strongly recommend checking the volume, by using the Windows tool for checking the disk, the next time it is mounted before using it.

13.1.3 Duplicating a volume

If a secure volume is duplicated by copying the *.vbox* container file, both copies cannot be mounted simultaneously on a single workstation.

Generally, you are advised against duplicating volumes by copying the *.vbox* container file. This method should be used only for backups.

13.1.4 Using the volume within a Windows multi-session context

For a better integration within Microsoft Windows, a Stormshield Data Virtual Disk volume behaves in the same way than a standard storage volume.

An encrypted volume mounted in a Windows session is thus accessible from other Windows sessions opened on the workstation.

To avoid that, the user must select the SDS Enterprise account lockout when the Windows session locks.

Locking the account unmounts encrypted volumes mounted in the session. However unmounting by force a volume may damage the files opened on this volume. The user must save modifications before locking the session.

On a Window server, a remote user cannot see the Stormshield Data Virtual Disk volumes mounted by other remote users connected to the same server. We recommend however selecting automatic locking because disk volumes are actually just hidden. Data on the disks may then be accessed.

13.1.5 Stormshield Data Virtual Disk limitations

- The maximum size of a Stormshield Data Virtual Disk volume is 2048 GB (2 TB).
- Volumes larger than 2 GB cannot be formatted in FAT16 (FAT16 limitation).
- Volumes smaller than 2.5 MB cannot be formatted in NTFS (NTFS limitation).
- The icon for a Stormshield Data Virtual Disk volume may be incorrect in Explorer (either a normal disk icon or a document icon).

13.2 Stormshield Data File

If permissions (in NTFS terms) are set for a file, they will be lost after Stormshield Data File encrypts or decrypts the file.

If Windows permissions must be implemented on confidential files secured by Stormshield Data File, these permissions must then be set for the directories containing the files, not on the files themselves.

13.3 Stormshield Data Mail

13.3.1 Information about the RTF format

Stormshield Data Mail does not support RTF format because it does not guarantee reliable interoperability with the security mechanism in SDS Enterprise. Using the RTF format may cause information loss.

HTML is therefore the recommended format for writing secure messages, as it enables interoperability.

13.3.2 Using cross-encryption

Cross-encryption makes it possible to update the protection level of secured messages (S/MIME format messages or plain text messages including an attachment encrypted with Stormshield Data File). It consists of re-encrypting with your new key any message encrypted with a former encryption key and by using the default encryption algorithm defined in the user account.

To access the user's private keys during cross-encryption, you must be connected to SDS Enterprise.

You are therefore advised to disable automatic logout and session locking in your screen saver options when there are many messages to be cross-encrypted. The processing time is proportional to the number of messages to be processed.

A secured message will not be cross-encrypted if the user's current encryption key is the key that originally encrypted the message.

A message which has already been cross-encrypted by the current key will not be cross-encrypted again, as long as the user's current key is not updated.

13.3.3 Configuring the LDAP directory for certificates that contain several e-mail addresses

If recipients with several e-mail addresses in their certificates are not in the SDS Enterprise trusted address book but are in your LDAP directory(ies), a dialog box warning that "the certificate has not been found in your trusted address book" may appear when an encrypted e-mail is sent to this recipient.

In this case, you can configure the LDAP directory to retrieve the certificate when sending the encrypted e-mail.

To do so, check that the user attribute « proxyAddresses » in the LDAP directory contains all the user secondary e-mail addresses.

In the attribute, each secondary e-mail address must be preceded by « smtp: ", whereas the main address is preceded by « SMTP: ».

This attribute can be updated via enterprise mail servers such as Exchange.

13.3.4 Ensuring the consistency of e-mail addresses

When sending e-mails, the system will search for the best available certificate for each recipient. If the certificate comes from the LDAP directory, the consistency of the recipient's e-mail address will be verified with the address specified in this certificate. If they are not the same, the certificate is rejected and the e-mail may not be sent.

If you use internal aliases for users' addresses, this mechanism may not be appropriate.

- To disable the consistency check on a user's workstation, set the value of **DWORD CheckLDAPCertificateEmailAddress** to 0 in the HKLM\SOFTWARE\Arkoon\Security BOX Enterprise\Mail registry key.

NOTE
The e-mail address consistency check is implemented for security reasons. We therefore recommend that you do not disable it unless specifically required.

13.4 Stormshield Data Team

INFORMATION
As of January 2025, Stormshield will no longer offer functional upgrades to the Stormshield Data Team feature. The feature will switch to maintenance mode from this date.

13.4.1 DFS environment restriction

- A DFS root cannot be encrypted.
- SDS Enterprise accounts must not be stored on a DFS share.

13.4.2 Managing the user's temporary folder (%TEMP%)

Do not list multiple collaborators on rules that involve the temporary folder for the Windows profile. Applications use this folder to store user-specific temporary files.

Failure to comply with this rule may cause blockages.

13.4.3 Managing the system's temporary folder

System processes (services, for example) use this folder to store temporary files, and it is shared with the other users on the system.

This folder may be, for example, **C:\windows\temp**. The exact location depends on the installation of the operating system.

This folder must not be encrypted with Stormshield Data Team.

13.4.4 Moving folders available offline

The *cachemov.exe* utility can be used to move the - *<%WINDIR%>\CSC* - system folder, which contains files available offline.

In order to support this particular environment, the configuration on workstations must be modified via the registry. For more information, see section *Moving folders available offline* in the *Advanced configuration guide*.

13.4.5 Keeping performance optimal on the workstation

When Stormshield Data Team is used, users' workstations may slow down. To keep the usual levels of performance, you can change the configuration on workstations via the registry base. For further information, refer to the section *Keeping performance optimal on the workstation* in the *Advanced configuration guide*.

13.4.6 Moving an intra-volume folder

Intra-volume folders are not allowed to be moved when the source and destination directories do not have the same level of security.

If the action is executed in Windows Explorer, the moving operation will be replaced with `Copy + Delete the source`. In this case, the destination folder's security level will be applied to the “moved” folder.

13.4.7 Prohibiting access to encrypted files if the certificate is revoked

Stormshield Data Team prevents users from accessing encrypted files if their encryption key certificates are revoked, even when these users appear in the list of users.

In this case:

- Any operations on files secured by Stormshield Data Team (opening, creating, renaming, moving and deleting) will be denied.

These operations will fail even if the file is encrypted with an old encryption key.

- no operations can be performed on Team rules. The user interfaces are grayed out and only allow rule parameters to be read.

Stormshield Data Team uses the revocation controller configuration defined at the user level. Therefore:

- Do not allow the user to disable revocation control,
- Do not forget to correctly configure the downloading rule for the revocation lists.

13.4.8 Changing the dates of the last access

Some solutions, such as archive solutions, rely on the dates on which files were last accessed to run their processes. However, when Stormshield Data Team is installed on a workstation, the last access date is changed when a folder is browsed.

You can control the restoration of the last access dates on files, and then delete changes to last access dates when files were opened with Stormshield Data Team. To do so, change the configuration on workstations via the registry base. For more information, refer to the section *Changing the dates of the last access* in the *Advanced configuration guide*.

13.4.9 Using the network cache

When the cache is used in a network, changes may be made to files, folders and rules beyond the control of the user's local file system. If a change is made by a user on the network, other workstations using the share may temporarily have incorrect cache entries and therefore invalid statuses in Windows Explorer. As a result, the new statuses will not take effect immediately.

You can take the following measures to reduce these inconsistencies:

- Secure a folder from the moment it is created while it is still empty,
- Notify users so that they will avoid using the share at critical moments,

- Do not destroy a folder and then recreate it with the same name but different characteristics. If you must perform this operation, leave enough time between both operations for caches to be updated (15 minutes or restart the user's workstation to immediately apply changes),
- For major operations, perform them on a file tree (securing/desecuring) at times when no or few users are connected (e.g. during lunch break or at the end of the day).

As there is no particular issue with adding or deleting coworkers from an existing rule, no special precautions need to be taken.

14. Managing access keys to the public API of SDMC

SDMC features a public API allowing to interrogate your SDMC server via your own orchestration tools, e.g. to extract its administration logs.

To authorize these queries, you must provide keys to third party tools.

The administrator must have the *Managing API keys* permission. For more information, refer to the section Managing administrators in SDMC.

The **API keys** menu of the SDMC console allows viewing the API keys generated for a company account, creating some and also revoking them by deleting them. Once generated in SDMC, you can no longer view the value of the keys. Ensure they are stored in a secured location.

By default, API keys expire after one year.

WARNING
An API key grants administration privileges directly on the SDMC server. To prevent security vulnerabilities, ensure that the workstations from which requests are sent through the SDMC API are safe and located within a restricted administration perimeter, such as a dedicated administration network.

To see examples on how to use the API with keys, refer to https://github.com/stormshield/sds-sample-api.

For more general information about the SDMC API and its use, refer to the API documentation.

14.1 Generating an API key

1. Select the **API keys** menu on the left.
   This menu appears only if you have the *Managing API keys* administration permission.
2. Click on **Add** at the top on the right.
3. Enter a name for the key in alphanumeric characters. Name must not be longer than 200 characters.
4. Click on **Add**.
   The **API key** zone indicates the character string matching the key.
5. Click on **Copy** and paste this string in a secure location. This step is essential if you wish to use the key, as it will no longer be displayed after this for security reasons.
6. Click on **Close** to go back to the API keys window.
   The imported certificate then appears in the list. It will be valid for a year and its expiration date appears. The window shows all the keys generated for your company account.

14.2 Revoking an API key

To revoke an API key, i.e. make it unusable for issue queries to the API, you must remove it from the list.

1. Select the **API keys** menu on the left.
2. Click on to the right of the key you wish to revoke.

3. Click on **Remove definitely**.

14.3 Using the SDMC API

Queries possible via the SDMC API are documented in this page. More precisely you can use these queries to extract the administration logs from the server.

15. Troubleshooting

If you encounter issues, you can look up event logs in the Windows Event Viewer and also use the tracing system to form a diagnosis with the SDS Enterprise Technical Assistance Center.

15.1 Viewing event logs

All events relating to SDS Enterprise can be accessed via Windows event viewer on user workstations.

During a fresh SDS Enterprise installation, event logs are enabled by default.

To view the list of event logs available in SDS Enterprise, refer to List of SDS Enterprise logs.

If you encounter issues while using SDS Enterprise, refer to Troubleshooting issues.

You can disable event logs by following the procedure below.

15.1.1 Understanding the message types

The error messages generated by SDS Enterprise may be one of three types:

- Information messages: a simple informational message that does not involve security or require corrective action,
- Warnings: an indication to alert the administrator to a potential issue,
- Errors: a serious issue that prevents the product from functioning.

15.1.2 Understanding details of logged information

Logs make it possible to display the following information:

- **Message type**: information, warning or error,
- **Date**: date on which the message was generated;
- **Time**: time at which the message was generated;
- **Source**: source from which the event was generated;
- **Category**: short description of the event source;
- **Event**: number corresponding to the type of generated message;
- **User**: SDS Enterprise user name.
- **Computer**: computer name (NetBIOS).

15.1.3 Disabling event logs

Event logs can be enabled via the local group policy editor (*gpedit.msc*).

The Microsoft Windows GPO uses *.admx* files for configuration parameters, and *.adml* language files, where all texts relating to these parameters are referenced.

The installation of SDS Enterprise places:

- the *Sbsuite.admx* file in the *%SystemRoot%\PolicyDefinitions* folder
- the *Sbsuite.adml* language file in the *%SystemRoot%\PolicyDefinitions\en-US* folder.

These files are loaded automatically when *gpedit*is started.

1. Run the local group policy editor: **Start** > **Execute** > then enter *gpedit.msc*.
2. Click on **Administrative Templates** > **Stormshield Data Security components**.
3. Double-click on **Enable logging of events generated by Stormshield Data Security for all modules**.
4. Select the **Disabled** option. This is a global switch. No events will then be generated, regardless of the setting made for each feature under **Stormshield Data Security Components** .

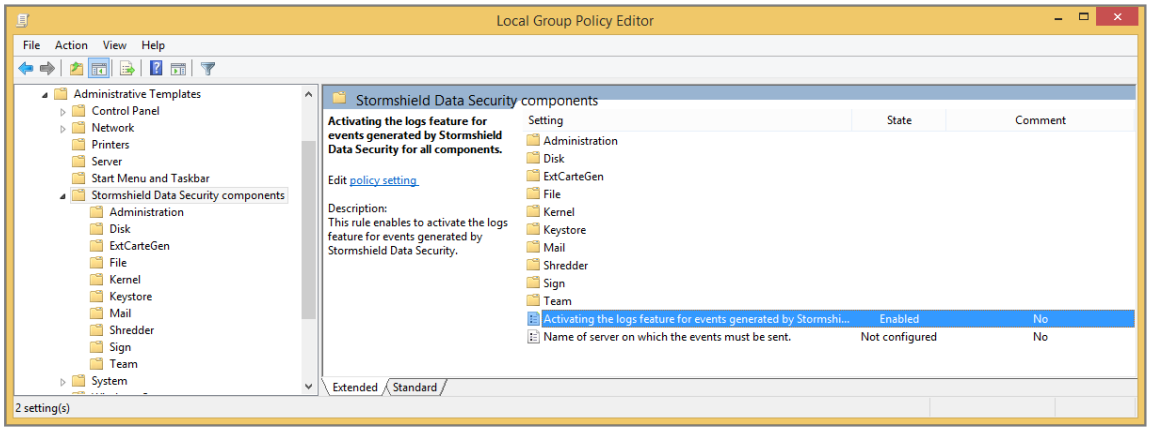
You can also choose to only disable events for certain features.

For example, to disable events for the Virtual Disk feature only:

1. Keep logging of events generated by SDS Enterprise enabled for all features.
2. Turn off event logging for the Virtual Disk feature under **Stormshield Data Security Components**.

A feature with the option “Not configured” selected is enabled if the global switch is enabled.

Any changes made to the group policy will change the corresponding values in the registry. These values apply to all users individually. They can be found under the key HKEY_CURRENT_USER in the registry base. However, a group policy (specified remotely by Active Directory) takes priority over changes made locally.



15.2 Troubleshooting issues

If any issue occurs when using the software, SDS Enterprise offers a tracing system. It provides the SDS Enterprise Technical Assistance Center with useful information for the analysis of issues. The workstation and Windows session do not need to be restarted to enable tracing.

15.2.1 Understanding how tracing works

To enable tracing on SDS Enterprise, double-click on a file with the extension *.sbdiag* provided by the SDS Enterprise Technical Assistance Center, or select the **Stormshield Tracing** menu from the Windows **Start** menu.

During tracing, the following elements will be saved in a *.zip* archive found in the the folder **C:/ProgramData/Arkoon/Security BOX/Traces:**

- Generated SDS Enterprise traces (*Trace.etl* file).
- SDS Enterprise events (*audits.evtx* file): it is possible to configure the generation of this file in the interface or in the *.sbdiag* file. Events logs must be enabled. To enable them, refer to Viewing event logs.

- A digest of the workstation (*sbdiag.xml* file): contains information about the system and the installation of SDS Enterprise and the Microsoft Office suite,
- A PSR trace (Problem Steps Recorder): this tool is provided with Windows operating systems from Windows 7 and allows recording actions performed when reproducing a problem on the workstation. It is possible to configure the generation of this file in the interface or in the *.sbdiag* file.

15.2.2 Use the tracing system

From an *.sbdiag* file

1. Double-click on the *.sbdiag* file provided by the SDS Enterprise Technical Assistance Center to start the tracing interface in pre-configured mode.
2. Click on **Start tracing**.
3. Wait for the **Tracing in progress** message.
4. Reproduce the sequence of actions to be traced.
5. When the sequence is done, click on **Stop tracing**.
6. In the next window, add comments for the SDS Enterprise Technical Assistance Center if needed. Provide additional information about the method of reproduction, time markers, file names, etc.
7. Wait until the folder containing the tracing session opens. Send the zip file *Trace<timestamp>.zip* to the SDS Enterprise Technical Assistance Center.

In pre-configured mode, parameters cannot be modified.

From the tracing interface

If you do not have an *.sbdiag* file or if you want to customize the tracing session, select **Stormshield Tracing** in the Windows **Start** menu:

1. To start the session, first open the settings window by clicking on the gear icon and select options.
2. You are advised to select both options in the upper settings panel. Events logs must be enabled to extract SDS Enterprise events. To enable them, refer to Viewing event logs.

> **NOTE**
> The PSR (Problem Steps Recorder) tool can record screen captures during tracing session.

3. Select only the Kernel module and the module affected by the tracing.
4. After you have clicked on **OK** in the dialogue box, a file with the extension *.sbdiag* will automatically be created, and the tracing session can then proceed as described in the previous section.

16. Uninstalling SDS Enterprise from user workstations

1. Open the **Control Panel**.
2. Select **Programs and features**.
3. From the list of programs, select SDS Enterprise.
4. Click on **Uninstall**.
5. Follow the on-screen instructions.

You can also use the Setup command of the installation pack which gives you the choice to install, uninstall and modify the list of components installed on your PC.

17. Further reading

Additional information and answers to questions you may have are available in the Stormshield knowledge base (authentication required).

Appendix A. List of SDS Enterprise logs

You can refer to the list of event logs by feature in the following sections.

To enable logging in the Windows Event Viewer and understand logged information, refer to Viewing event logs.

A.1 Administration

Stormshield Data Security Suite installation

Number	Type	Description
300	Information	Stormshield Data Security installation was successful. The configuration parameters are: • Version: %2 (%3) • Patch version: %4 • Installation folder: %5 • Company: %6
301	Information	Stormshield Data Security modification was successful. The configuration parameters are: • Version: %2 (%3) • Patch version: %4 • Installation folder: %5
302	Information	Stormshield Data Security uninstall was successful. The configuration parameters are: • Version: %2 (%3) • Patch version: %4 • Installation folder: %5
303	Information	Stormshield Data Security patch installation was successful. The configuration parameters are: - • Version: %2 (%3) • Patch version: %4 • Installation folder: %5 • Company: %6
304	Information	Stormshield Data Security patch modification was successful. The configuration parameters are: - • Version: %2 (%3) • Patch version: %4 • Installation folder: %5

Number	Type	Description
305	Information	Stormshield Data Security patch uninstall was successful. The configuration parameters are: - • Version: %2 (%3) • Patch version: %4 • Installation folder: %5
306	Error	Stormshield Data Security setup closed unexpectedly.
307	Error	Stormshield Data Security setup closed before it ends up correctly.
308	Error	According to the group policy, events are sent to the '%2' server, but connecting to this address fails with the error code %3: "%4". Please ask your administrator.
309	Error	The policy is not available: %2.
310	Error	The policy is incomplete, check the following settings: %2.
311	Warning	In the absence of a custom security policy, the default policy will be used.
1925	Error	You do not have sufficient privileges to run this installation for all users on this computer. Open a session as an administrator, then try to run this installation again.

Directory administration

Number	Type	Description
700	Information	The automatic update of the directory was successful.
701	Error	The automatic update of the directory failed.
702	Information	The manual update of the directory was successful.
703	Error	The update of the directory failed.
704	Information	The update of the directory at logon was successful.
705	Error	The update of the directory at logon failed.
706	Information	The update of the directory after unlock was successful.
707	Error	The update of the directory after unlock failed.
708	Information	The export of certificate(s) %4 of the directory with format '%3' was successful in file '%2'.
709	Error	The export of certificate(s) %4 of the directory with format '%3' in file '%2' failed.
710	Information	The import of certificate(s) %2 in the directory was successful.
711	Error	The import of certificate(s) %2 in the directory failed.
712	Information	COMPATIBILITY_MODE option: Value: %2 Acces %3
713	Information	ALLOW_MANUAL_UPDATE option: Value: %2 Acces %3
714	Information	DISABLE_CHECK_ON_DISPLAY option: Value: %2 Acces %3

Number	Type	Description
715	Information	ACTIVATE option: Value: %2 Acces %3
716	Information	ALLOW_DOWNLOAD_CRL option: Value: %2 Acces %3
717	Information	REPLACE_FROM_LDAP option: Value: %2 Acces %3
718	Information	START_ON_CONNECTION option: Value: %2 Acces %3
719	Information	REPLACE_FROM_LDAP_OUTOFDATE_CERT option: Value: %2 Acces %3
720	Information	REPLACE_FROM_LDAP_REVOKEDCERT option: Value: %2 Acces %3
721	Information	DELETE_IF_OUTOFDATE option: Value: %2 Acces %3
722	Information	DELETE_IF_REVOKE option: Value: %2 Acces %3
723	Information	DELETE_IF_NOT_ON_LDAP option: Value: %2 Acces %3
724	Information	SB_EVT_ADMINISTRATION_INFO_REPLACE_ON_VALID_CERT option: Value: %2 Acces %3
725	Information	TIMER option: Value: %2 Acces %3
726	Information	COMMON_NAME_REPLACE option: Value: %2 Acces %3
727	Information	COMMON_NAME_OUT_OF_DATE option: Value: %2 Acces %3
728	Information	COMMON_NAME_REVOKE option: Value: %2 Acces %3
729	Information	COMMON_NAME_NOT_ON_LDAP option: Value: %2 Acces %3
730	Warning	The LDAP update of the certificate which email is '%2' could not be applied because the revocation list is not available.

Management of the revocation list

Number	Type	Description
1100	Information	The update of the revocation list %2 was successful.
1101	Error	The update of the revocation list %2 failed.
1102	Information	The update of the revocation list %2 from the cache was successful.
1103	Error	The automatic update of the revocation list %2 from the cache failed.
1104	Information	The CRL %2 database has been reset.
1105	Error	DLL %2 could not be loaded.

A.2 Virtual Disk

Volume management

Number	Type	Description
8300	Information	The automatic volume '%2' was successfully mounted on '%3' in '%4' mode.

Number	Type	Description
8301	Error	The automatic volume '%2' failed to mount on '%3' in '%4' mode.
8302	Information	The volume '%2' was successfully mounted on '%3' in '%4' mode.
8303	Error	The volume '%2' failed to mount on '%3' in '%4' mode.
8304	Information	The automatic volume '%2' mounted on '%3' was successfully unmounted.
8305	Error	The automatic volume '%2' mounted on '%3' failed to unmount.
8306	Information	The volume '%2' mounted on '%3' was successfully unmounted.
8307	Error	The volume '%2' mounted on '%3' failed to unmount.
8308	Information	The volume '%2' mounted on '%3' was successfully locked.
8309	Error	The volume '%2' mounted on '%3' failed to unlock.
8310	Information	The volume '%2' mounted on '%3' was successfully unlocked.
8311	Error	The volume '%2' mounted on '%3' failed to unlock.
8312	Information	The volume '%2' was successfully created.
8313	Error	The creation of volume '%2' failed.
8314	Information	The volume '%2' was successfully added to the list of automatic volumes. It will be mounted on '%3'.
8315	Error	The volume '%2' failed to be added to the list of automatic volumes.
8316	Information	The volume '%2' mounted on '%3' was successfully deleted from the list of automatic volumes.
8317	Error	The volume '%2' (mounted on '%3') failed to be deleted from the list of automatic volumes.

A.3 File

Encryption/Decryption

Number	Type	Description
18300	Information	The user successfully encrypted the file '%2' in auto-decryptable mode.
18301	Error	The encryption of the file '%2' in auto-decryptable mode failed.
18302	Information	The user successfully encrypted the folder '%2' in auto-decryptable mode.
18303	Error	The encryption of the folder '%2' in auto-decryptable mode failed.
18304	Information	The user successfully encrypted the file '%2' via SecurityBOX SmartFile.
18305	Error	The encryption of file '%2' via SecurityBOX SmartFile failed.
18306	Information	The user successfully encrypted the folder '%2' via SecurityBOX SmartFile.
18307	Error	The encryption of the folder '%2' via SecurityBOX SmartFile failed.

Number	Type	Description
18308	Information	The user successfully encrypted the file '%2' for the following peers: %3.
18309	Error	The encryption of the file '%2' failed for the following peers: %3.
18310	Information	The user successfully encrypted the folder '%2' for the following peers: %3.
18311	Error	The encryption of the folder '%2' failed for the following peers: %3.
18312	Information	These coworkers were successfully added to the file '%2': %r%3.
18313	Error	These coworkers could not be added to the file '%2': %r%3.
18314	Information	These coworkers were successfully removed from the file '%2': %r%3.
18315	Error	These coworkers could not be removed from the file '%2': %r%3.
18316	Error	An error occurred with the certificate of '%2'.
18317	Information	The following files were not processed because they were not encrypted: %2.
18318	Information	The following files were not processed because they were not encrypted for the logged-in user: %2.

Encryption/Decryption

Number	Type	Description
18700	Information	The user successfully encrypted the file '%2'.
18701	Error	The encryption of the file '%2' failed.
18702	Information	The user successfully decrypted the file '%2'.
18703	Error	The decryption of the file '%2' failed.
18704	Error	The path '%2' has not been decrypted because it is protected by Share.
18705	Error	The folder '%2' was not decrypted because it contains a Share protected subfolder.
18706	Information	The user started the conversion of file '%2' to .sdsx.
18707	Information	File '%2' successfully converted to .sdsx.
18708	Error	Conversion of file '%2' to .sdsx failed.
18709	Information	File '%2' successfully converted to .sdsx. The original file has been moved to location '%3'.
18710	Error	File '%2' successfully converted to .sdsx. Moving the original file to the '%3' folder failed.
18711	Warning	Opening the files and converting to .sdsx failed because the user selected multiple files and/or folders containing at least one .sbox file.
18712	Information	The temporary decryption directory has been deleted.
18713	Error	The temporary decryption directory could not be deleted.

A.4 Kernel

Start/Stop

Number	Type	Description
25300	Information	The kernel was successfully started.
25301	Error	The kernel failed to start.
25302	Information	The kernel was successfully shut down.
25303	Error	The kernel failed to shut down.
25304	Error	An error in the security policy prevents Stormshield Data Security from working. The incorrect parameter is %2.
25305	Error	An error in the registry configuration is preventing Stormshield Data Security from working. The incorrect parameter is %s.
25306	Warning	The value of parameter %2 configured in the registry database is invalid.

LDAPS authentication

Number	Type	Description
25700	Warning	SSL security warning: invalid server certificate. Issued to: %2% Issued by: %3 Valid from %4 to %5. Contact your administrator.
25701	Error	SSL security error: invalid server certificate. Issued to: %2% Issued by: %3 Valid from %4 to %5. Contact your administrator.
25702	Error	All authentication methods submitted to the LDAP server %2 have failed.
25703	Information	The user is authenticated by the LDAP server %2 with the method: %3.

Select cryptographic device

Number	Type	Description
26100	Information	The user selected the '%2' middleware.

A.5 Keystore

Login/Logout

Number	Type	Description
31300	Information	The user logged in to their Stormshield Data Security keyring.
31301	Error	Login to the Stormshield Data Security keyring failed.
31302	Information	The user logged out of their Stormshield Data Security keyring.
31303	Error	The user could not log out of their Stormshield Data Security keyring.

Number	Type	Description
31304	Information	The Stormshield Data Security user session was locked.
31305	Error	The Stormshield Data Security user session failed to lock.
31306	Information	The Stormshield Data Security user session successfully unlocked.
31307	Error	The Stormshield Data Security user session failed to unlock.
31308	Warning	A user is already logged in to Stormshield Data Security in another Windows session.
31309	Warning	Incorrect secret code entered.
31310	Warning	The identifier '%2' does not match any Stormshield Data Security account.
31311	Warning	The Stormshield Data Security session could not be unlocked because the wrong smart card was in the drive.
31312	Error	The Stormshield Data Security account or smart card was blocked.
31313	Information	The smart card was removed from the drive.
31314	Error	The smart card is blocked.
31315	Error	Unable to notify a component.
31316	Error	Unable to load a component: '%2'.

Account management

Number	Type	Description
31700	Information	The account was successfully created.
31701	Warning	The installation of the Stormshield Data Security account encountered a non-blocking error.
31702	Error	Could not install the Stormshield Data Security account.
31703	Information	The Stormshield Data Security account was successfully uninstalled.
31704	Error	Could not uninstall the Stormshield Data Security account.
31705	Information	The security policy was updated.
31706	Error	The security policy update failed with the following error: %2.
31707	Information	The Stormshield Data Security account was successfully exported.
31708	Error	Could not export the Stormshield Data Security account.
31709	Information	The account's secret code was successfully changed.
31710	Error	Could not change the account's secret code.
31711	Error	The number of errors while changing the secret code exceeded the authorized limit.

Number	Type	Description
31712	Error	Could not create a new Stormshield Data Security account because the smart card is blocked.
31713	Warning	Incorrect secret code entered.
31714	Error	The contents of the smart card do not allow automatic account creation.
31715	Error	Could not create a new Stormshield Data Security account because the template is blocked.
31716	Error	Could not create a new Stormshield Data Security account because the template cannot be accessed.
31717	Information	A new security policy signatory was set.
31718	Warning	The security policy update was not applied because the user has rejected the new signer.
31719	Information	Security policy downloaded from '%2'.
31720	Warning	Error in the security policy downloaded from '%2'.
31721	Information	The security policy update was not applied because the account is up to date.
31722	Error	The security policy update was not applied because the file signature is incorrect.
31723	Error	The security policy update was not applied for the following reason: '%2'.
31724	Warning	The security policy update was not applied despite the warning: %2.
31725	Error	The 'MasterPolicies' parameter prohibits the duplication of the file '%2'.
31726	Error	%2 smart card account automatically created: %3.

Key management

Number	Type	Description
32100	Information	The encryption key was successfully exported.
32101	Error	Failed to export the encryption key.
32102	Information	The encryption key was successfully renewed.
32103	Error	Failed to renew the encryption key.
32104	Information	The signature key was successfully exported.
32105	Error	Failed to export the signature key.
32106	Information	The signature key was successfully renewed.
32107	Error	Failed to renew the signature key.
32108	Information	The key was successfully exported.
32109	Error	Failed to export the key.

Number	Type	Description
32110	Information	The key was successfully renewed.
32111	Error	Failed to renew the key.
32112	Information	The encryption key certificate was successfully exported.
32113	Error	Failed to export the encryption key certificate.
32114	Information	The signature key certificate was successfully exported.
32115	Error	Failed to export the signature key certificate.
32116	Information	The key certificate was successfully exported.
32117	Error	Failed to export the key certificate.
32118	Information	A certificate for the %2 was not imported into the user account because it has expired.
32119	Information	A certificate for the %2 was not imported into the user account because it has insufficient privileges.

Keyring management

Number	Type	Description
32500	Information	The decryption key was successfully imported.
32501	Error	Failed to import the decryption key.
32502	Information	The recovery key was successfully imported.
32503	Error	Failed to import the recovery key.

A.6 Mail

Outgoing/Incoming

Number	Type	Description
39312	Information	The certificate of the user '%2' has not been found in the trusted address book.
39313	Information	The certificate of the user '%2' has been revoked.
39314	Information	The certificate of the user '%2' is no longer valid.
39315	Information	The trust chain of the user '%2' has been revoked.
39316	Information	The trust chain of the user '%2' is no longer valid.
39317	Information	The certificate revocation list is not available for the user '%2'.
39318	Warning	The user received an encrypted e-mail but does not have any decryption key.

Number	Type	Description
39319	Warning	The user received an e-mail with an invalid signature. The e-mail has been signed with the certificate '%2'.
39320	Information	Sending a signed e-mail was successful (Recipient(s): %2).
39321	Information	Sending an encrypted e-mail was successful (Recipient(s): %2).
39322	Information	Sending a signed and encrypted e-mail was successful (Recipient(s): %2).
39323	Error	The user received a message whose signature could not be verified. The source address of the message is '%2'.
39324	Error	The user received a message with an error in the certificate. The e-mail has been signed with the certificate '%2'.
39325	Warning	The user has received a message whose certificate is not secure. The e-mail has been signed with the certificate '%2'.
39326	Information	The message sent with sensitivity label %1 was signed automatically.
39327	Information	The message sent with sensitivity label %1 was encrypted automatically.
39328	Information	The message sent with sensitivity label %1 was encrypted and signed automatically.

Cross-encryption

Number	Type	Description
39700	Information	The user run transcipherment on the folder '%2'
39701	Warning	Issues occurred with transcipherment.

Disabling security

Number	Type	Description
40100	Information	The security of e-mails in the folder '%2' has been disabled.
40101	Information	The security of some e-mails has been disabled (number: %2).
40102	Warning	Issues occurred when disabling the security of some e-mails.

Administration

Number	Type	Description
40500	Information	The Stormshield Data Mail module has been successfully loaded in Outlook '%2'.
40501	Information	The Stormshield Data Mail module has been disabled in Outlook '%2'.
40502	Information	The following exception has been raised in the Stormshield Data Mail module: '%2'.

Number	Type	Description
40503	Warning	The following registry key, which is necessary for the Stormshield Data Mail Outlook Edition add-in to work properly, has been modified: '%2'.
40504	Warning	WKD servers could not be contacted when sending a message. Requests for the following URLs failed: %2.

A.7 Shredder

Number	Type	Description
46300	Information	Shredding was successfully initiated.
46301	Error	Failed to start shredding.
46302	Information	Shredding was successful.
46303	Error	Shredding failed.
46304	Information	The file '%2' was successfully deleted.
46305	Error	Could not delete the file "%2'.
46308	Information	Bin was securely emptied.
46309	Error	Failed to empty bin securely.
46310	Information	The list of files was securely cleaned.
46311	Error	Failed to clean the list of files securely.

A.8 Sign

Signature

Number	Type	Description
47300	Information	The file '%2' was successfully signed.
47301	Error	Could not sign the file r '%2'.
47302	Information	The file '%2' was successfully co-signed.
47303	Error	Could not co-sign the file '%2'.
47304	Information	The file '%2' was successfully counter-signed.
47305	Error	Could not counter-sign the file '%2'.
47306	Information	The file '%2' was successfully over-signed.
47307	Error	Could not over-sign the file r '%2'.
47308	Error	File '%2' is corrupted.

A.9 Team

Rule management

Number	Type	Description
49300	Information	A security rule has been set for the folder '%2'.
49301	Error	Configuration of folder '%2' as a secure folder failed.
49302	Information	The folder '%2' is back to clear mode (not secure).
49303	Error	Configuration of folder '%2' as a non-secure folder has failed.
49304	Information	The following coworkers have been successfully added to folder '%2' rule:%r%3.
49305	Error	Could not add the following coworkers to folder '%2' rule:%r%3.
49306	Information	The following coworkers have been successfully removed from folder '%2' rule:%r%3.
49307	Error	Could not remove the following coworkers from folder '%2' rule: %r%3.
49308	Information	The following owners have been successfully added to folder '%2' rule: %r%3.
49309	Error	Could not add the following owners to folder '%2' rule: %r%3.
49310	Information	The following owners have been successfully removed from folder '%2' rule: %r%3.
49311	Error	Could not remove the following owners from folder '%2' rule: %r%3.
49312	Information	Folder '%2' has been successfully configured as a secure folder (profile).
49313	Error	Configuration of folder '%2' as a secure folder failed (profile).
49314	Information	Folder '%2' has been successfully configured as a non-secure folder (profile).
49315	Error	Configuration of folder '%2' as a non-secure folder failed (profile).
49316	Information	The folder '%2' rule has been successfully updated (profile).
49317	Error	Could not update the folder '%2' rule (profile).
49318	Information	The following coworkers were successfully added to folder '%2' rule (profile):%r%3.
49319	Error	Could not add the following coworkers to folder '%2' rule (profile):%r%3.
49320	Information	The following coworkers have been successfully removed from folder '%2' rule (profile):%r%3.
49321	Error	Could not remove the following coworkers from folder '%2' rule (profile): %r%3.
49322	Warning	Could not update the rules file (.ust) of the folder '%2': inconsistent header.
49323	Warning	The user is not one of the users allowed for the rule on '%2'.
49324	Warning	The user is accessing the rule properties on '%2' even though the certificate is revoked.
49325	Information	The security rule of folder '%2' has been saved in the user account.

Number	Type	Description
49326	Warning	Could not find the certificate '%2'.
49327	Information	The certificate '%2' is invalid and has been ignored.
49328	Information	The certificate '%2' is invalid; the user interrupted the encryption operation.
49329	Warning	The certificate '%2' could not be fully verified and has been used.
49330	Information	The certificate '%2' could not be fully verified and has been ignored.
49331	Warning	The certificate '%2' is invalid and revoked, and has been deleted from the rule.
49332	Information	The safety rule on folder '% 2' has been restored from the user account.
49333	Warning	Attack suspected: the security rule of folder '%2' has been replaced.
49334	Information	The security rule of folder '%2' has disappeared.
49335	Warning	A false coworker has been detected and ignored in the security rule of folder '%2'.
49336	Information	The safety rule on folder '% 2' has been restored from the local rule.
49342	Warning	Could not verify the parent-child relationship or revocation list.

Team rule update

Number	Type	Description
49337	Warning	Could not find the new certificate of coworker '%2', who is no longer part of the rule.
49338	Warning	The rule known on folder '%2' is not up to date. The automatic update could not be applied.
49339	Warning	Folder '%2', to which the rule applies, could not be found or is no longer secure.
49340	Error	Could not find the encryption key of coworker '%2'.
49341	Warning	Could not find coworker '%2' in the rule.

Encryption/decryption

Number	Type	Description
49700	Information	File '%2' was successfully moved from a secure folder to a non-secure folder.
49701	Error	Failed to move file '%2' from a secure folder to a non-secure folder.
49702	Information	Folder '%2' was successfully moved from a secure folder to a non-secure folder.
49703	Error	Failed to move folder '%2' from a secure folder to a non-secure folder.
49704	Information	File '%2' was successfully secured with defined rules.
49705	Error	Failed to secure file '%2' with defined rules.

Number	Type	Description
49706	Information	Folder '%2' was successfully secured with defined rules.
49707	Error	Failed to secure folder '%2' with defined rules.
49708	Information	Security on file '%2' was successfully removed.
49709	Error	Failed to remove security from file '%2'.
49710	Information	Security was successfully removed from folder '%2'.
49711	Error	Failed to remove security from folder '%2'.
49712	Information	Securing operation cancelled.
49713	Information	Removal of security cancelled.
49714	Error	Could not ensure compliance of folder '%2': you do not have the Windows permissions.
49715	Warning	Could not ensure compliance of hidden folder '%2': you do not have the Windows permissions.

Backup/Restoration

Number	Type	Description
50100	Information	File '%2' successfully backed up.
50101	Error	Could not back up file '%2'.
50102	Information	Folder '%2' successfully backed up.
50103	Error	Could not back up folder '%2'.
50104	Information	File '%2' successfully restored.
50105	Error	Could not restore file '%2'.
50106	Information	Folder '%2' successfully restored.
50107	Error	Could not restore folder '%2'.
50108	Information	Save cancelled.
50109	Information	Restoration cancelled.
50110	Error	Could not save in folder '%2': you do not have the Windows permissions.
50111	Error	Could not restore in folder '%2': you do not have the Windows permissions.

Driver

Number	Type	Description
50500	Warning	File '%2' cannot be opened using '%3'.
50501	Error	A timeout occurred while trying to open the file '%2' using '%3'.

Number	Type	Description
50502	Error	Team service request failed: '%2' using '%3'.

A.10 Share

Number	File type	Type Description
14300	Information	The Share configuration file '%2' is invalid.
14301	Information	The Share configuration file '%2' is missing.
14302	Information	Unable to communicate with the Share driver.
14303	Information	The user successfully encrypted the file '%2' using an automatic protection rule.
14304	Error	Failed to encrypt file '%2' using an automatic protection rule.
14305	Information	The user has successfully encrypted the file '%2' using an automatic protection rule for the following correspondents: %r%3.
14306	Error	Failed to encrypt file '%2' using an automatic protection rule for the following correspondents: %r%3.
14307	Information	Automatic protection rule has been applied.
14308	Error	Automatic protection rule cannot be applied.
14309	Information	The user successfully encrypted the folder '%2' using an automatic protection rule.
14310	Error	Encryption of folder '%2' using an automatic protection rule failed.
14311	Information	Automatic protection rule has been activated.
14312	Error	Automatic protection rule cannot be enabled.
14313	Information	Automatic protection rule has been disabled.
14314	Error	Automatic protection rule cannot be disabled.
14315	Information	Automatic protection has been modified.
14316	Error	The automatic protection rule cannot be changed.

Annexe B. Compatibility between SDS Enterprise and other security solutions

To function correctly, SDS Enterprise must be able to access the resources listed below.

Please ensure that no other security solution prevents access to these resources on user workstations.

All files in the "C:\Program Files\Arkoon\Security BOX\" folder and its sub-folders	
Driver location and names	
C:\Windows\System32\drivers\SBTEAMW8.SYS	
C:\Windows\System32\drivers\SBSWAPW8.SYS	
C:\Windows\System32\drivers\SBOXDISK.SYS	
C:\Program Files\Arkoon\Security BOX\Kernel\SDSCloudDrv.sys	
Extensions specific toSDS Enterprise	
.sbt	.sdsx
.sbox	.vbox
.usr	.ust
.usd	.usx

Appendix C. Implementing the Microsoft Public Key Infrastructure (PKI) solution

SDS Enterprise operation requires the use of encryption and signature keys for all the company's users. To set up the Microsoft Windows PKI solution to generate your users' keys, follow the steps below.

Steps	Description
1	Add the Certification Authority role on a Windows server
2	Configuring the Certification Authority revocation list (CRL)
3	Create a key recovery agent
4	Create certificate templates
5	Create a signatory account for SDS Enterprise security policies
6	Create a SDS Enterprise recovery account
7	Generate user certificates

The implementation of Microsoft Windows PKI facilitates, among other things, the creation of user accounts in SSO mode, which require keys to be stored in Windows certificate stores. For more information, see Creating a Single Sign-On (SSO) account.

C.1 Requirements

You must have a Microsoft Windows server as the domain controller and assign the following roles to it:

- DHCP server
- DNS server
- Active Directory Domain Services (AD DS)

C.2 Adding the Certification Authority role on the Windows server

The first step is to implement a certification authority on your Windows server, using the **Active Directory Certificate Services** (AD CS) role. The certification authority issues, revokes and renews user keys.

The first certification authority you deploy becomes the root authority of your internal PKI. Subsequently, you can deploy secondary certification authorities and create a hierarchy of authorities.

Follow the procedure below to set up your certification authority and declare it in your SDS Enterprise security policies.

NOTE
For more information on using Windows **Server Manager** and implementing a certification authority, see the Microsoft documentation.

1. On your Windows server, open **Server Manager**.
2. Click **Add roles and features**.
3. Fill out the following screens.
4. On the server roles screen, select **Active Directory Certificate Services**.
5. Add the **Certification Authority** and **Certification Authority Web Enrollment** role services.
6. After installation, when configuring Active Directory Certificate Services, select **Enterprise CA** in **Setup Type**.
7. Select **Root CA** in **CA Type**.
8. Fill out the following screens.
9. Save the certification authority certificate in *.cer*, *.crt* or *.cert* format.
10. Import it into the SDMC certificate library by following the Managing authority certificates and recovery certificates in SDMC procedure.
11. Declare the certification authority in your security policies by following the Adding certification authorities and configuring certificate revocation control procedure.

C.3 Configuring the Certification Authority revocation list (CRL)

A certification authority can refer to a CRL to verify the validity of certificates. Your SDS Enterprise security policies must know where CRLs are distributed.

To configure your root authority CRL:

1. On the server, open the Certification Authority Manager *certsrv.msc* and view the properties of the certification authority you just created.
2. On the **Extensions** tab, click on **Add**.
3. Enter the public location that will host the CRL, then confirm.
4. Check the **Include in CRLs. Clients use this to find Delta CRL locations** and **Include in the CDP extension of issued certificates** options.
5. Select the LDAP link in the CRL locations and clear the **Include issued certificates in CDP extension** check box.
6. Close the authority properties.
7. Restart the Active Directory Certificate Services.
8. In your SDS Enterprise security policies in SDMC, specify the CRL distribution points by following the Adding certification authorities and configuring certificate revocation control.

We recommend that you do not store the CRL file on the AD CS server. You can store it on a web server that is accessible to all users over HTTPS.

NOTE
For more information on using the Certification Authority Manager, see the Microsoft documentation.

C.4 Creating a key recovery agent

The key recovery agent is a Windows administrator authorized to decrypt private keys that are archived by the PKI.

Start by creating a user who will be the key recovery agent in your Active Directory. Then create a key recovery agent certificate template and publish it:

1. On the server, open the Certification Authority Manager *certsrv.msc*.
2. In the Certification Authority's **Certificate templates** directory, right-click and select **Manage**.
3. In the right-hand panel, right-click the **Key Recovery Agent** template and select **Duplicate Template**.
4. On the **Security** tab, add your key recovery agent.
5. Grant it the **Enroll** permission.
6. Confirm template creation.
7. To publish the new template, in the Certification authority's **Certificate templates** directory, right-click and select **New** > **Certificate template to issue**.
8. Select the key recovery agent certificate template.
9. Confirm the publication.
   The new template is now available in **Certificate templates** and ready to use.

Next, request a certificate for the key recovery agent according to the new template added earlier:

1. On a domain workstation, log on with the Windows account of the key recovery agent.
2. Open the Windows Certificate Manager *certmgr.msc*.
3. In the **Personal** > **Certificates** store, right-click and select **All Tasks** > **Request new certificate**.
4. Select the key recovery agent certificate template.
   The certificate is generated in the Windows certificate store of the key recovery agent.

Confirm the certificate request again in the Certification authority Manager on the authority server:

1. Open the *certsrv.msc* manager.
2. Select the Certification authority's **Pending requests** directory.
3. Select the certificate corresponding to the request.
4. Right-click and select **All Tasks** > **Issue**.

Complete the creation by declaring the key of the key recovery agent:

1. In the *certsrv.msc* manager, view the certification authority properties.
2. On the **Recovery Agents** tab, select the **Archive the key** option and add the key recovery agent certificate.
3. Confirm and restart the Active Directory Certificate Services.

Finally, in the properties of the encryption and recovery certificate templates that you will create below:

- Make sure you have selected the **Archive subject's encryption private key** check box on the **Request Handling** tab to archive all private keys in the PKI.

NOTE
For more information on using the Certification Authority Manager, see the Microsoft documentation.

C.5 Creating certificate templates

You must now create certificate templates to subsequently generate the encryption and signature certificates for users, and the associated private keys. You also need templates for SDS Enterprise security policy signatories and recovery accounts.

Creating certificate templates for encryption and signature

1. On the server, open the Certification Authority Manager *certsrv.msc*.
2. In the Certification Authority's **Certificate templates** directory, right-click and select **Manage**.
3. Right-click the **User** template and select **Duplicate template**.
4. On the **General** tab, enter its name and validity period, along with the renewal period if necessary.
5. On the **Request Handling** tab:
   - Select **Encryption** or **Signature** depending on the type of template to be created,
   - In the case of a certificate template for encryption, select the **Archive subject's encryption private key** check box to allow the key recovery agent to decrypt the private keys that are archived by the PKI if required,
   - You may want to allow the private key to be exported if your company's security policy allows it.
6. On the **Cryptography** tab, select 4096 as the minimum key size.
7. On the **Extensions** tab, make sure that you have these extensions with the following options:

	Encryption options	Signature options
Application Policies	Secure Email	Secure Email
Usage of the key	- Allow key exchange only with key encryption (Key encipherment) - Allow encryption of user data - Make this extension critical	- Digital signature - Signature is proof of origin (nonrepudiation) - Make this extension critical

   Be sure to delete the other extensions displayed in the tab so that you only have the two extensions shown in the table.
8. On the **Security** tab, select the **Enroll** permission for domain users. This is sufficient for a manual certificate request.
9. Confirm template creation.

To publish the newly created template, see Publishing templates.

Creating the certificate template for the SDS Enterprise security policy signatory

The certificate template for the signatory is identical to the signature certificate template for users. Only the validity period of the certificate differs.

1. Follow the procedure described in Creating certificate templates for encryption and signature by selecting **Signature** on the **Request Handling** tab.
2. On the **General** tab, we recommend that you set the validity period to be longer than the typical duration for user signature certificates.

To publish the newly created template, see Publishing templates.

Creating the certificate template for the recovery account

The certificate template for the recovery account is identical to the encryption certificate template for users. Only the validity period of the certificate differs.

1. Follow the procedure described in Creating certificate templates for encryption and signature by selecting **Encryption** on the **Request Handling** tab.
2. On the **General** tab, we recommend that you set the validity period to be longer than the duration typically expected for user encryption certificates.

To publish the newly created template, see Publishing templates.

Publishing templates

To publish certificate templates:

1. In the Certification authority Manager *certsrv.msc*, right-click on the Certification authority's **Certificate Templates** directory and select **New** > **Certificate template to issue**.
2. Select the previously created templates.
3. Confirm the publication.
   The new templates are now available and ready to use in **Certificate Templates**.

C.6 Creating a signatory account for SDS Enterprise security policies

SDS Enterprise security policies are signed by a signatory account, guaranteeing their authenticity and integrity.

The signatory account is a Windows user account with a signature key only, used exclusively to sign security policies.

To create the certificate and associated private key of the policy signatory account, use the previously added signatory certificate template:

1. On a domain workstation, log on with the Windows account of the policy signatory agent.
2. Open the Windows Certificate Manager *certmgr.msc*.
3. In the **Personal** > **Certificates** store, right-click and select **All Tasks** > **Request new certificate**.
4. Select the security policy signatory certificate template.
   The certificate is generated in the Windows certificate store of the policy signatory agent.
5. Save the certificate in *.cer*, *.crt* or *.cert* format.
6. Save the private key in *.pfx* format.

To sign a security policy, see Downloading and signing a security policy.

> **NOTE**
> For more information on using the Windows Certificate Manager, see the Microsoft documentation.

C.7 Creating a SDS Enterprise recovery account

The recovery account is required to secure the use of SDS Enterprise. This is a Windows user account with an encryption key only.

For more information on how the recovery account works, see Enabling data recovery.

To create the certificate and associated private key for the recovery account, use the certificate template for the previously added recovery account:

1. On a domain workstation, log on with the recovery agent's Windows account.
2. Open the Windows Certificate Manager *certmgr.msc*.
3. In the **Personal** > **Certificates** store, right-click and select **All Tasks** > **Request new certificate**.
4. Select the certificate template for the recovery account.
   The certificate is generated in the recovery agent's Windows certificate store.
5. Save the certificate in *.cer*, *.crt* or *.cert* format.
6. Save the private key in *.pfx* format.

> **WARNING**
> Make sure to keep this key in a safe place.

7. Import the certificate into the SDMC certificate library by following the Managing authority certificates and recovery certificates in SDMC procedure.
8. Specify the certificates of the recovery accounts to be used in each of your security policies by following the Enabling data recovery procedure.

> **NOTE**
> For more information on using the Windows Certificate Manager, see the Microsoft documentation.

C.8 Generating user certificates

To create SDS Enterprise user accounts in SSO mode, user certificates must be stored in the Windows certificate stores of the workstations. Thus, when a user logs on to SDS Enterprise for the first time, their account is created automatically, provided that the security policy also includes the necessary settings.

To create and deploy a SDS Enterprise security policy that allows accounts to be created in SSO mode, see Creating a Single Sign-On (SSO) account.

There are two possible solutions for managing certificate creation requests from SDS Enterprise solution users and for storing them in Windows stores:

- automatic enrollment deployed via a group policy (GPO).
- manual request via Windows Certificate Manager *certmgr.msc* on user workstations.

Configuring automatic user enrollment

Automatic enrollment allows users to request a certificate transparently when logging into their Windows session. The certificate is then automatically generated via a group policy and stored in the user's Windows certificate store.

> **REQUIREMENTS**
> To set up automatic enrollment, you must first check the self-enrollment permission for domain

users, in the **Security** tab of the properties of your encryption and signature certificate templates on your server acting as a certification authority.

On your server, create a new group policy:

1. Open the Group policy manager.
2. Create a new policy for that domain.
3. In the Group Policy Editor, select the **User Configuration** > **Policies** > **Windows Settings** > **Security Settings** > **Public Key Policies** directory.
4. In the right-hand panel, open the properties of the **Certificate Services Client – Auto Enrollment** object.
5. In **Configuration Model**, select **Enabled**.
6. Check the **Renew expired certificates, update pending certificates, and remove revoked certificates** and **Update certificates that use certificate templates** options, then confirm.
7. Deploy the new group policy to users' workstations.

NOTE
For more information on using group policies, see the Microsoft documentation.

Requesting a certificate manually

Each user can request a certificate on their workstation. The user must:

1. Open the Windows Certificate Manager *certmgr.msc*.
2. On the **Personal** > **Certificates** store, right-click and select **All Tasks** > **Request a new certificate**.
3. Select the encryption and signature certificate templates and complete the procedure. Certificates are generated in the Windows certificate store.

Appendix D. Third-party libraries

SDS Enterprise uses the following libraries:

- JsonCpp
- OpenSSL
- OssASN1
- ZLib
- Efsw
- Rebex S/MIME for .NET
- Didisoft OpenPGP for .NET

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