SafeNet Authentication Client Integration Guide

Using SAC CBA for Check Point Endpoint Security – FDE



THE DATA PROTECTION COMPANY

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Third-Party Software Acknowledgement

This document is intended to help users of SafeNet products when working with third-party software, such as Check Point Endpoint Security – FDE.

Material from third-party software is being used solely for the purpose of making instructions clear. Screen images and content obtained from third-party software will be acknowledged as such.

Description

SafeNet Authentication Client (SAC) is a public key infrastructure (PKI) middleware that provides a secure method for exchanging information based on public key cryptography, enabling trusted third-party verification of user identities. SAC enables the implementation of strong two-factor authentication using standard certificates, as well as encryption and digital signing of data. The SAC generic integration with CAPI, CNG, and PKCS#11 security interfaces enables out-of-the-box interoperability with a variety of security applications, offering security for web access, network logon, email, and data. PKI keys and certificates can be created, stored, and used securely with the hardware or software tokens.

SafeNet Authentication Manager (SAM) provides your organization with a comprehensive platform to manage all of your authentication requirements, across the enterprise and the cloud, in a single, integrated system. SAM enables management of the complete user authentication life cycle. SAM links tokens with users, organizational rules, and security applications to allow streamlined handling of your organization's authentication infrastructure with a flexible, extensible, and scalable management platform.

SAM is a comprehensive token management system. It is an out-of-the-box solution for Public Certificate Authorities (CA) and enterprises to ease the administration of SafeNet's hardware or software tokens devices. SAM is designed and developed based on the best practices of managing PKI devices in common PKI implementations. It offers robust yet easy to customize frameworks that meets different organizations' PKI devices management workflows and policies. Using SAM to manage tokens is not mandatory, but it is recommended for enterprise organizations.

For more information, refer to the SafeNet Authentication Manager Administrator Guide.

Check Point Endpoint Security – FDE encryption provides superior encryption across a variety of endpoints, such as desktops and laptops. The Check Point Endpoint Security – FDE solution uses strong access control with pre-boot authentication (PBA). Encryption and decryption are completely transparent to the end user and are performed without hindering system performance.

An effective strong authentication solution must be able to address data breaches on the rise for companies to protect their information assets and comply with privacy regulations. Data encryption is a common technique used by enterprises today, but to be most effective, it must be accompanied by strong two factor user authentication to desktop, mobile, and laptop computer applications. Working together, encryption and authentication reduce risk and stop unauthorized access to sensitive data.

SafeNet smart card certificate-based tokens and secure USB certificate-based tokens are interoperable with Third-Party Product, providing a solution for encryption and strong access control that prevents unauthorized access to sensitive data and stops information loss and exposure. The integrated solution delivers greater security, reduced operational costs, and improved compliance by adding smart card-based strong user authentication to Check Point Endpoint Security – FDE.

SafeNet's X.509 certificate-based USB tokens and smart cards have been integrated with Check Point Endpoint Security – FDE, providing two-factor authentication at both pre-boot and Microsoft Windows levels.

The SafeNet's X.509 certificate-based USB tokens and smart cards provide secure storage for the certificates needed for endpoint encryption for Check Point Endpoint Security – FDE functionality to boot up. If SafeNet's X.509 certificate-based USB token or smart card is not inserted in the client machine, or if the certificates are deleted, revoked, or expired, the Check Point Endpoint Security – FDE software will not boot up and the data on the laptop will stay encrypted and secure.

This document provides guidelines for deploying certificate-based authentication (CBA) for user authentication to Check Point Endpoint Security – FDE using SafeNet tokens.

It is assumed that the Check Point Endpoint Security – FDE environment is already configured and working with static passwords prior to implementing SafeNet multi-factor authentication.

Check Point Endpoint Security – FDE can be configured to support multi-factor authentication in several modes. CBA will be used for the purpose of working with SafeNet products.

Applicability

The information in this document applies to:

- SafeNet Authentication Client (SAC)—SafeNet Authentication Client is the middleware that manages SafeNet's tokens.
- Check Point Endpoint Security FDE

Environment

The integration environment that was used in this document is based on the following software versions:

- SafeNet Authentication Client (SAC)—Version 9.0
- Check Point Endpoint Security FDE—Version 6.3.1

Audience

This document is targeted to system administrators who are familiar with Check Point Endpoint Security – FDE, and are interested in adding multi-factor authentication capabilities during pre-boot using SafeNet tokens.

Pre-Boot Authentication Flow

The diagram below illustrates the flow of certificate-based authentication during pre-boot:



Ì

NOTE: On successful validation, if single sign-on is configured in the Check Point Endpoint Security – FDE policies, the user is logged in to the system. If single sign-on is not configured in the Check Point Endpoint Security – FDE policies, the Windows login screen is displayed after pre-boot authentication.

Prerequisites

To enable users to perform pre-boot authentication with Check Point Endpoint Security – FDE using SafeNet tokens, ensure the following:

- Users can authenticate through pre-boot from the Check Point Endpoint Security FDE environment with a static password before configuring the Check Point Endpoint Security FDE to use SafeNet tokens.
- If SAM is used to manage the tokens, TPO should be configured with MS CA connector. For further details, refer to the section "Connector for Microsoft CA" in the *SafeNet Authentication Manager Administrator's Guide*.
- Users have a SafeNet token with valid certificate enrolled on it.
- To use CBA, the Microsoft Enterprise Certificate Authority must be installed and configured. In general, any CA can be used. However, in this guide, integration is demonstrated using Microsoft CA.

Supported Tokens in SAC

SAC supports a number of tokens that can be used as second authentication factor for users who are authenticating at pre-boot through Check Point Endpoint Security – FDE.

SafeNet Authentication Client 9.0 (GA) supports the following tokens:

Certificate-based USB tokens

- SafeNet eToken PRO Java 72K
- SafeNet eToken PRO Anywhere
- SafeNet eToken 5100/5105
- SafeNet eToken 5200/5205
- SafeNet eToken 5200/5205 HID and VSR

Smart Cards

- SafeNet eToken PRO Smartcard 72K
- SafeNet eToken 4100

Certificate-based Hybrid USB Tokens

- SafeNet eToken 7300
- SafeNet eToken 7300-HID
- SafeNet eToken 7000 (SafeNet eToken NG-OTP)

Before Installing Check Point Endpoint Security – FDE

Before installing Check Point Endpoint Security - FDE, ensure the following activities are performed:

- Editing the prd.inf File, page 8
- Creating a Certificate, page 9
- Exporting a Certificate, page 11
- Importing a Certificate, page 12

Editing the prd.inf File

To include SafeNet eToken 7300 and SafeNet eToken 5100 tokens for pre-boot authentication, edit the **prd.inf** file.

- 1. Open the **prd.inf** file for editing. This file is located in the installation folder; for example, **C:\1_Pointsec for PC\Modules\prd.inf**.
- 2. Add the following information for 7300 and 5100 tokens:

[eToken 7300] VendorID = VID_0529 ProductIDList = PID_0602 Version = 4 DriverChksum = 9393322743 DriverBinary = prd_ccid.bin DriverChksumUEFI = 3561675170 DriverBinaryUEFI = etok_prd.efz

[eToken 5100] VendorID = VID_0529 ProductIDList = PID_0600 Version = 4 DriverChksum = 9393322743 DriverBinary = prd_ccid.bin DriverChksumUEFI = 3561675170 DriverBinaryUEFI = etok_prd.efz

3. Save the prd.inf file.

Creating a Certificate

- 1. Insert the SafeNet eToken 5100 or SafeNet eToken 7300 to the USB slot. Make sure SAC is already installed on the machine.
- 2. Run the certCreator.exe application, which is located in the installation folder; for example, C:\1_Pointsec for PC\Tools\Token Certificate Creator\CertCreator
- 3. On the Full Disk Encryption Token Certificate Creator window, in the Choose CSP field, select eToken Base Cryptographic Provider, and then click OK.

oken Certificate Creation	<u>}</u>	
Choose CSP:		
eToken Base Cryptogra	aphic Provider	•
Make certificate(s) a	vailable to Windows after	creation
		12

(The screen image above is from Check Point® software. Trademarks are the property of their respective owners.)

4. On the Token Logon window, in the Token Password field, enter the token password, and then click OK.

SafeNet.	SafeNet Authentication Client	1 15664UGS 5\16 105664555 606+ 01 0 5 1455 1 5 1456 1 5 1456 1 5 16 1 5 16 16
Enter the Token Pas	sword	
Token Name: Token Password:		
	Current Language: EN	Cancel

5. On the CertCreator window, click No.



(The screen image above is from Check Point[®] software. Trademarks are the property of their respective owners.)

6. On the Full Disk Encryption – Token Certificate Creator window, click Exit.

🔁 Full Disk Encryption - Token Certificate Creator	X
Token Certificate Creation	-
Choose CSP:	
eToken Base Cryptographic Provider	
Make certificate(s) available to Windows after creation	
OK Exit	

(The screen image above is from Check Point® software. Trademarks are the property of their respective owners.)

7. The certificate is created. You can see the certificate in SAC tools under User Certificates > Full Disk Encryption.



Exporting a Certificate

Export the certificate from SAC Tools to your machine. This certificate is later imported to the Windows machine you want to protect with pre-boot authentication.

1. Right-click the SafeNet Authentication Client tray icon, and from the shortcut menu, select **Tools**.

Or

From the Windows taskbar, click Start > Programs > SafeNet > SafeNet Authentication Client > SafeNet Authentication Client Tools.

2. Expand User Certificates, right-click Full Disk Encryption, and then click Export Certificate.

SafeNet Authentication Client	t Tools	
SafeNet		● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●
SafeNet Authe	ntication Client	a 🕼 🧐 👔 🥐 🏚
	Certificate Data Certificate Data Serial number Issued to Serial number Issued to Serial number Issued to Serial number Issued to Serial number Set as KSP Set as KSP	25 41 f7 fa 80 fb 0c 95 4c 0e 35 04 fb 79 21 02 Full Disk Encryption Full Disk Encryption Tuesday, September 23, 2014 Friday, December 31, 2049 Smartcard Logon <none> Valid</none>
	Private Key Data	
	Key size	1024 bits
	Container name	FDE Smartcard Logon
	Modulus	C4 Ta 92 64 32 80 /5 d4 35 /c 2c 1c 9b 02 4a 2b 0f 1b ae 19 a'
	Key specification	AI_KEYEXCHANGE
	Default key container	Tes
	Auxiliary key container	Yes
	Sign padding on-board	NO
	Cryptographic Provider	(C5P +

3. On the Token Logon window, in the Token Password field, enter the token password, and then click OK.

vet Authentication Client	FILERATING
My Token	
•••••	
Current Language: EN	
	My Token ••••••• Current Language: EN OK

4. Select the location where you want to save the certificate, and then click **Save**.

ook in: 🛛 🕌 C: \Users \pshu	kla\Desktop		0 0 📑 🗉 🔳
Name 🔺	Size	Туре	Date Modified
📙 Boot USB		File Folder	9/19/2014 9:08:48 AM
en_sql_server_2008_ente		File Folder	8/13/2014 2:56:46 PM
🚺 NG Flash files		File Folder	9/10/2014 10:04:06 AM
🚺 player		File Folder	7/24/2014 2:38:47 PM
DintSec		File Folder	9/23/2014 4:21:21 PM
SAM SAM		File Folder	8/29/2014 11:07:59 AM
SAS SAS		File Folder	8/21/2014 8:48:29 AM
SecurityFundamentals		File Folder	7/24/2014 2:38:40 PM
Leam outing		File Folder	9/23/2014 9:28:04 AM
🐌 Training Docs		File Folder	8/1/2014 10:49:37 AM
ile name: certificate_1			Save

Importing a Certificate

Import the certificate to the machine you want to protect with pre-boot authentication.

- 1. Locate the certificate you have exported in the section "Exporting a Certificate" on page 11.
- 2. Right-click the certificate and then click Install Certificate.



3. On the Certificate Import Wizard window, click Next.



4. Select Place all certificates in the following store, click Browse, select Trusted Root Certification Authorities from the Certificate Store, and then click Next.

ertificate Store	
Certificate stores are system areas whe	ere certificates are kept.
Windows can automatically select a cert the certificate.	ificate store, or you can specify a location for
O Automatically select the certificat	e store based on the type of certificate
Place all certificates in the followir	ng store
Certificate store:	
Trusted Root Certification Author	orities Browse
arn more about <u>certificate stores</u>	

5. If a security warning such as the one shown below is displayed, click **Yes**.

Λ	You are about to install a certificate from a certification authority (CA)			
<u></u>	claiming to represent:			
	Full Disk Encryption			
	Windows cannot validate that the certificate is actually from "Full Disk			
	Encryption". You should confirm its origin by contacting "Full Disk			
	Encryption". The following number will assist you in this process:			
	Thumbprint (sha1): 176BF2AD DEA8EFC4 1AFC4BE5 7514B8C9 7E334E35			
	Warning:			
	If you install this root certificate, Windows will automatically trust any			
	certificate issued by this CA. Installing a certificate with an unconfirmed			
	thumbprint is a security risk. If you click "Yes" you acknowledge this risk.			
	Do you want to install this certificate?			
	Do you want to install this certificate?			
	Do you want to install this certificate?			
	Do you want to install this certificate?			

6. The certificate is imported successfully. Click **OK**.



Installing Check Point Endpoint Security – FDE

Install Check Point Endpoint Security – FDE and configure the settings for smart card authentication using the certificate and eToken.

- 1. Start the Check Point Endpoint Security FDE installer Pointsec for PC.msi from C:\1_Pointsec for PC\.
- 2. Click Accept.



(The screen image above is from Check Point® software. Trademarks are the property of their respective owners.)

3. Select No, I don't want to read README.txt, and then click Next.

Check Point	Endpoint Security - Full Disk Encryption - Installshield Wizard n README.txt	
	Open README.txt for reading: Yes, I want to read README.txt No, I don't want to read README.txt	
InstallShield -	< Back Next >	Cancel

(The screen image above is from Check Point® software. Trademarks are the property of their respective owners.)

4. On the Welcome window, click Next.



(The screen image above is from Check Point® software. Trademarks are the property of their respective owners.)

5. Complete the following fields, and then click Next.

Name	Enter your name.	
Company	Enter the name of your organization.	
Serial Number Click Insert and select the Full Disk Encryption serial number.		

Check Point Endpoint Security - Full Disk Encryption - Installshield Wizard	×
Enter your information. Enter your name, organization, and the Full Disk Encryption serial number.	2
Enter your information:	
Name	
SafeNet	
Company	
SafeNet	
Serial number	
	nsert
InstallShield	
< Back Next >	Cancel

(The screen image above is from Check Point® software. Trademarks are the property of their respective owners.)

6. Add a user account that uses **Password** as the authentication method. Complete the following fields, and then click **Next**.

Username	Enter a name for this user account.	
Authentication Method	Select Password.	
Password	Enter a password for this user account.	
Confirm Password	Enter the password again.	

Jser account name	Settings:
ALICE	Password:

Authentication method:	Confirm password:

Password	
🗇 Dynamic token	
Smart card	

(The screen image above is from Check Point[®] software. Trademarks are the property of their respective owners.)

7. Add a user account that uses **Smart card** as the authentication method. Complete the following fields, and then click **Next**.

User account name	Enter a name for this user account.	
Authentication method Select Smart card.		
Settings	Select the certificate. If the Check Point Endpoint Security – FDE certificate is not displayed in the right pane, check that the token with the certificate is inserted, and click Refresh to update the display.	

ser account name	Settings:		
BOB	issued to	Issued by	Location
	Full Disk Encry	Full Disk Encr.	e Token Bas
uthentication method:			
Decement			
/ Password			
) Dynamic token	20		
Count and		m	
Smart card			

(The screen image above is from Check Point® software. Trademarks are the property of their respective owners.)

8. In the left pane, select the relevant reader drivers (for example, eToken 7300 and eToken 5100). Similarly, in the right pane, select the relevant card drivers. Click **Next**.

Select reader drivers.	Select card drivers.
Dell Keyboard SK-3106	Aladdin eToken PRO 32K
Dell Latitude D410, D610, D810 (Texas I	Aladdin eToken PRO 32k 4.2b
Dell Latitude D420, D620, D820; Precisio	Aladdin eToken PRO 64K
Dell Latitude D430, D630, D830; Precisio	Aladdin eToken PRO 64k 4.2
Dell Precision M20, M70 (Texas Instrume	Aladdin eToken PRO 64k 4.2b
Dell Smart Card Reader USB Keyboard	Aladdin eToken PRO 72k Java 1.0
eToken 5100	Aladdin eToken PRO 72k Java 1.0b
eToken 7300	Aladdin eToken PRO NG-FLASH
Gemplus GemCore POS Pro	Aladdin eToken PRO OTP
Gemplus GemCore SIM Pro	Aladdin eToken PRO SmartCard CardOS
Gemplus GemPC Card PCMCIA	Aladdin eToken PRO SmartCard CardOS
Gemplus GemPC Express	A-trust ACOS EMV A05
Gemplus GemPC Key	Axalto or Schlumberger Cyberflex 32K

(The screen image above is from Check Point® software. Trademarks are the property of their respective owners.)

9. Select **Boot protection** and/or **Encryption** for each file system as required. Next, select the required **Algorithm** type, and then click **Next**.

Choose protection.		5
Encrypt and enable preboot authe	entication for all disk volur	nes
Volume	Boot protection	Encryption
No label (C:) [disk:0,volume:0] System Reserved [disk:0,volume:1]	Boot protection Boot protection	Encryption Encryption
Algorithm: Algorithm: Algorithm:	ES	•
	r	

(The screen image above is from Check Point[®] software. Trademarks are the property of their respective owners.)

10. Select the path for the locations where the **recovery file** and the **central log file** will be stored, and then click **Next**.

Check I	Point Endpoint Security - Full Disk Encryption - Installshield Wizard	×
A	Recovery file search path Specify a path for storing the recovery file(s).	3
	Enter a path where the recovery file will be stored.	
	C:\FDE_Recovery	
	Browse	
	Enter a path where the central log file will be stored	
	C:\Logs	
	Browse	
nstallShi	ield	
	<pre> < Back Next > Cancel</pre>	

(The screen image above is from Check Point[®] software. Trademarks are the property of their respective owners.)

11. On the Access to network paths window, click Next

Check Point Endpoint S	ecurity - Full Disk Encryption - Instalishield Wizard	
Access to net You can config network path	work paths gure a Windows account that will be used to access (s).	2
Use a configured W	indows account for access to the network path(s).	
	Account (domain\username):	
	Password:	
	Verify password:	
nstallShield		
	< Back Next >	Cancel

(The screen image above is from Check Point® software. Trademarks are the property of their respective owners.)

12. Click Next.



(The screen image above is from Check Point[®] software. Trademarks are the property of their respective owners.)

13. Click **Finish**. The installation is complete.



(The screen image above is from Check Point[®] software. Trademarks are the property of their respective owners.)

14. Click **Yes**. The PC restarts. You can now log on using eToken.



(The screen image above is from Check Point® software. Trademarks are the property of their respective owners.)

Running the Solution

Pre-boot can successfully unlock your system when you present the appropriate smart card (containing the certificate specified while installing Check Point Endpoint Security – FDE and the correct token password.

Ensure that you insert the token (containing the certificate of the user) either before starting the system or before attempting to authenticate.

- 1. Start the protected system.
- 2. In the PIN field, enter your token password and then click OK.

Token authentication	n	
Check Point Endpoi	nt Security	Check Point
Enter Token PIN. PIN	k	
		OK Cancel

(The screen image above is from Check Point® software. Trademarks are the property of their respective owners.)

3. If the PIN is correct, the user is authenticated. Click **Continue**.



(The screen image above is from Check Point[®] software. Trademarks are the property of their respective owners.)

4. On the Windows login window, enter your Windows credentials, and then press the Enter key.



(The screen image above is from Microsoft® software. Trademarks are the property of their respective owners.)

If the Windows credentials are validated, you will be logged in to the protected system.

Support Contacts

If you encounter a problem while installing, registering, or operating this product, please make sure that you have read the documentation. If you cannot resolve the issue, contact your supplier or SafeNet Customer Support. SafeNet Customer Support operates 24 hours a day, 7 days a week. Your level of access to this service is governed by the support plan arrangements made between SafeNet and your organization. Please consult this support plan for further information about your entitlements, including the hours when telephone support is available to you.

Contact Method	Contact Information		
Address	SafeNet, Inc. 4690 Millennium Drive Belcamp, Maryland 21017 USA		
Phone	United States International	1-800-545-6608 1-410-931-7520	
Technical Support Customer Portal	Support Portal https://serviceportal.safenet-inc.com Existing customers with a Technical Support Customer Portal account can log in to manage incidents, get the latest software upgrades, and access the SafeNet Knowle Base.		