

# SafeNet Authentication Client Integration Guide

Using SafeNet Authentication Client CBA for McAfee Drive Encryption

All information herein is either public information or is the property of and owned solely by Gemalto and/or its subsidiaries who shall have and keep the sole right to file patent applications or any other kind of intellectual property protection in connection with such information.

Nothing herein shall be construed as implying or granting to you any rights, by license, grant or otherwise, under any intellectual and/or industrial property rights of or concerning any of Gemalto's information.

This document can be used for informational, non-commercial, internal and personal use only provided that:

- The copyright notice below, the confidentiality and proprietary legend and this full warning notice appear in all copies.
- This document shall not be posted on any network computer or broadcast in any media and no modification of any part of this document shall be made.

Use for any other purpose is expressly prohibited and may result in severe civil and criminal liabilities.

The information contained in this document is provided "AS IS" without any warranty of any kind. Unless otherwise expressly agreed in writing, Gemalto makes no warranty as to the value or accuracy of information contained herein.

The document could include technical inaccuracies or typographical errors. Changes are periodically added to the information herein. Furthermore, Gemalto reserves the right to make any change or improvement in the specifications data, information, and the like described herein, at any time.

Gemalto hereby disclaims all warranties and conditions with regard to the information contained herein, including all implied warranties of merchantability, fitness for a particular purpose, title and non-infringement. In no event shall Gemalto be liable, whether in contract, tort or otherwise, for any indirect, special or consequential damages or any damages whatsoever including but not limited to damages resulting from loss of use, data, profits, revenues, or customers, arising out of or in connection with the use or performance of information contained in this document.

Gemalto does not and shall not warrant that this product will be resistant to all possible attacks and shall not incur, and disclaims, any liability in this respect. Even if each product is compliant with current security standards in force on the date of their design, security mechanisms' resistance necessarily evolves according to the state of the art in security and notably under the emergence of new attacks. Under no circumstances, shall Gemalto be held liable for any third party actions and in particular in case of any successful attack against systems or equipment incorporating Gemalto products. Gemalto disclaims any liability with respect to security for direct, indirect, incidental or consequential damages that result from any use of its products. It is further stressed that independent testing and verification by the person using the product is particularly encouraged, especially in any application in which defective, incorrect or insecure functioning could result in damage to persons or property, denial of service or loss of privacy.

© 2010 - 2017 Gemalto. All rights reserved. Gemalto and the Gemalto logo are trademarks and service marks of Gemalto and/or its subsidiaries and are registered in certain countries. All other trademarks and service marks, whether registered or not in specific countries, are the property of their respective owners.

**Document Number:** 007-013791-001, Rev. A

**Release Date:** June 2017

# Contents

Third-Party Software Acknowledgement .....	4
Description .....	4
Applicability .....	5
Environment.....	5
Audience .....	5
Pre-Boot Authentication Flow .....	6
Prerequisites .....	7
Supported Tokens and Smart Cards in SafeNet Authentication Client .....	7
Configuring McAfee Drive Encryption.....	8
Creating User Based Policy .....	8
Configuring CBA Policy .....	11
Configuring a Policy Assignment Rule .....	14
Assigning the Policy to a System .....	19
Configuring User-Based Policy Enforcement.....	23
Update the Client Machine .....	27
Running the Solution .....	30
Support Contacts .....	32

# Third-Party Software Acknowledgement

---

This document is intended to help users of Gemalto products when working with third-party software, such as McAfee Drive Encryption.

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.

Drive encryption, also referred to as full disk encryption, is encryption software that helps protect data on Microsoft Windows tablets, laptops, and desktop PCs to prevent the loss of sensitive data, especially from lost or stolen equipment. It is designed to make all data on a system drive unintelligible to unauthorized persons, which in turn helps meet compliance requirements.

Drive encryption is compatible with traditional hard drives (spinning media AKA HDD), solid-state drives (SSD), and self-encrypting drives (SED and OPAL). Drive encryption is a software component available in three McAfee data and endpoint protection suites, and is managed through the McAfee ePolicy Orchestrator (McAfee ePO) management console.

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 McAfee Drive Encryption, 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 McAfee Drive Encryption.

Gemalto's X.509 certificate-based USB tokens and smart cards have been integrated with McAfee Drive Encryption, providing two-factor authentication at both pre-boot and Microsoft Windows levels.

The Gemalto's X.509 certificate-based USB tokens and smart cards provide secure storage for the certificates needed for endpoint encryption for McAfee Drive Encryption functionality to boot up. If Gemalto'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 McAfee Drive Encryption 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 McAfee Drive Encryption using Gemalto tokens or smart cards.

It is assumed that the McAfee Drive Encryption environment is already configured and working with static passwords prior to implementing Gemalto multi-factor authentication.

McAfee Drive Encryption can be configured to support multi-factor authentication in several modes. CBA will be used for the purpose of working with Gemalto products.

## Applicability

---

The information in this document applies to:

- **SafeNet Authentication Client (SAC) Typical installation mode** - SafeNet Authentication Client is public key infrastructure (PKI) middleware that manages Gemalto's tokens and smart cards.
- **SafeNet Authentication Client (SAC) IDGo800 Compatible mode** - IDGo800 Minidriver based package, uses Microsoft Smart Card Base Cryptographic Provider to manage Gemalto IDPrime MD smart cards.

For more details about different SAC installation modes, please refer to Customization section in the *SafeNet Authentication Client Administrator Guide*.

- **McAfee Drive Encryption**

## Environment

---

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

- **SafeNet Authentication Client (SAC)** - 10.3
- **McAfee Drive Encryption** - 7.1.2
- **McAfee ePolicy Orchestrator** - 5.3

## Audience

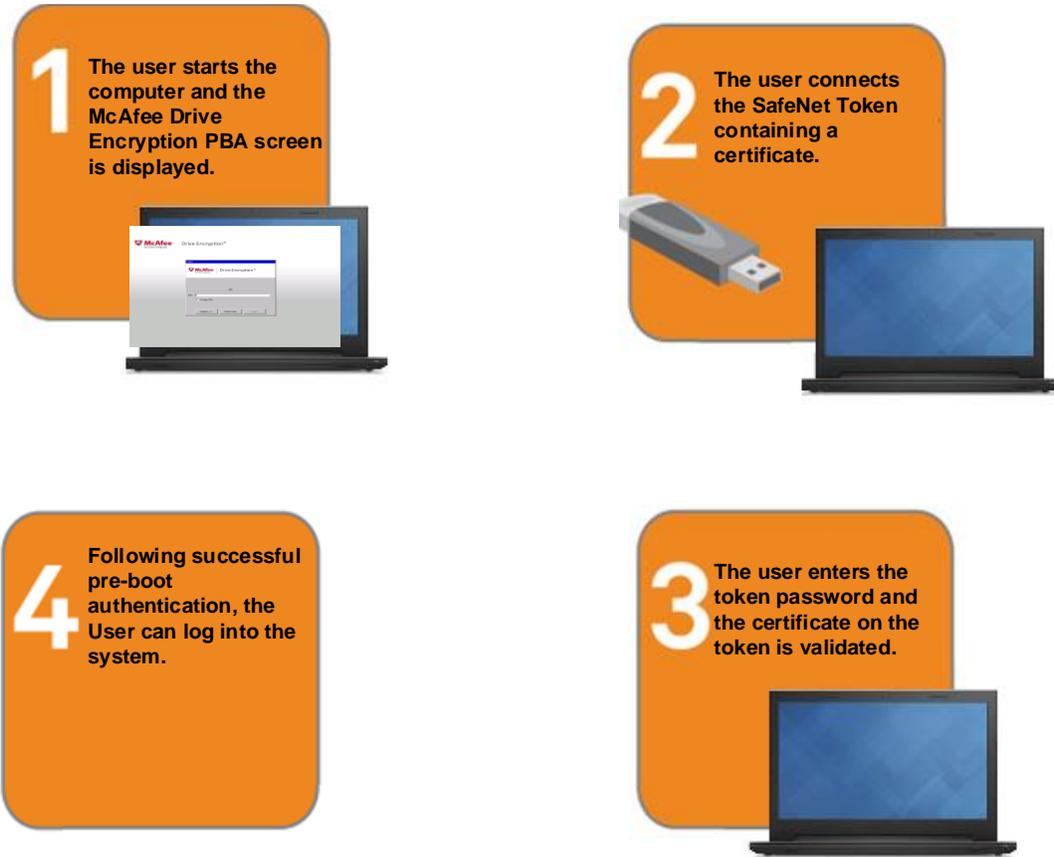
---

This document is intended for system administrators who are familiar with McAfee Drive Encryption, 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:



**NOTE:** Following successful pre-boot validation, if single sign-on is configured in the McAfee Drive Encryption policies, the user is logged into the system. If single sign-on is not configured in the McAfee Drive Encryption policies, the Windows login screen is displayed after pre-boot authentication.

---

## Prerequisites

---

To enable users to perform pre-boot authentication with McAfee Drive Encryption using Gemalto tokens and smart cards, ensure the following:

- Users can authenticate through pre-boot from the McAfee Drive Encryption environment with a static password before configuring the McAfee Drive Encryption to use Gemalto tokens and smart cards.
- If SafeNet Authentication Manager (SAM) is used to manage the tokens, Token Policy Object (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 Gemalto token or smart card with a valid certificate enrolled.
- To use CBA, the Microsoft Enterprise Certificate Authority must be installed and configured. Any CA can be used. In this guide, integration is demonstrated using Microsoft CA.
- SafeNet Authentication Client 10.3 must be installed on all client machines.

## Supported Tokens and Smart Cards in SafeNet Authentication Client

---

SafeNet Authentication Client 10.3 supports the following tokens and smart cards with McAfee Drive Encryption:

### **Certificate-based USB tokens**

- SafeNet eToken 5110 GA

### **Smart Cards**

- Gemalto IDPrime MD 830 L2

# Configuring McAfee Drive Encryption

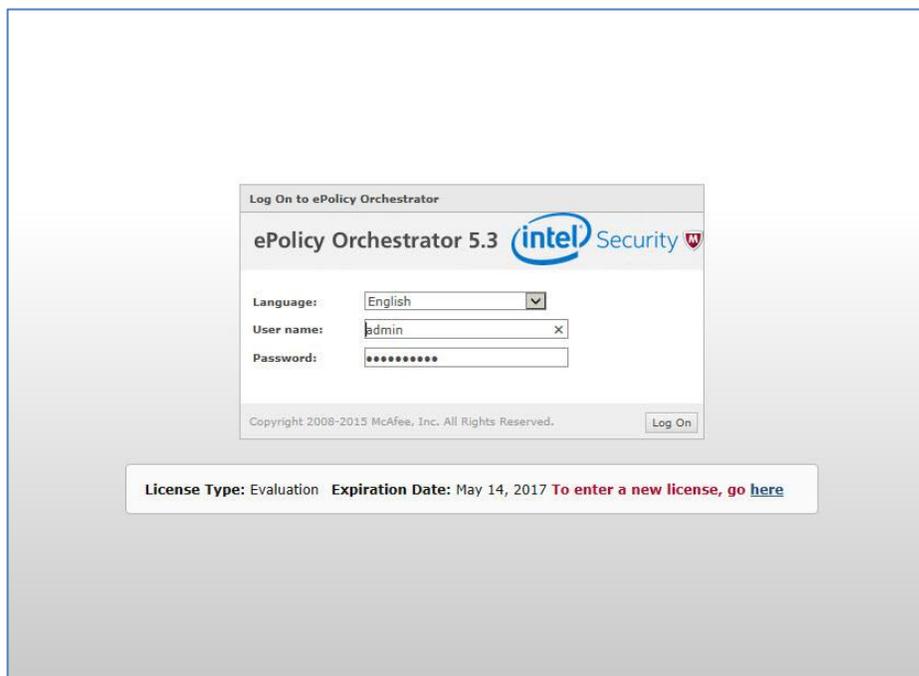
In order to deploy and configure the McAfee Drive Encryption on the client machine, the ePolicy Orchestrator server must be installed.

This document assumes the following:

- McAfee ePolicy Orchestrator is installed.
- The McAfee agent is deployed on client machines.
- Drive Encryption policy is deployed on client machines, and is configured with username and password authentication.

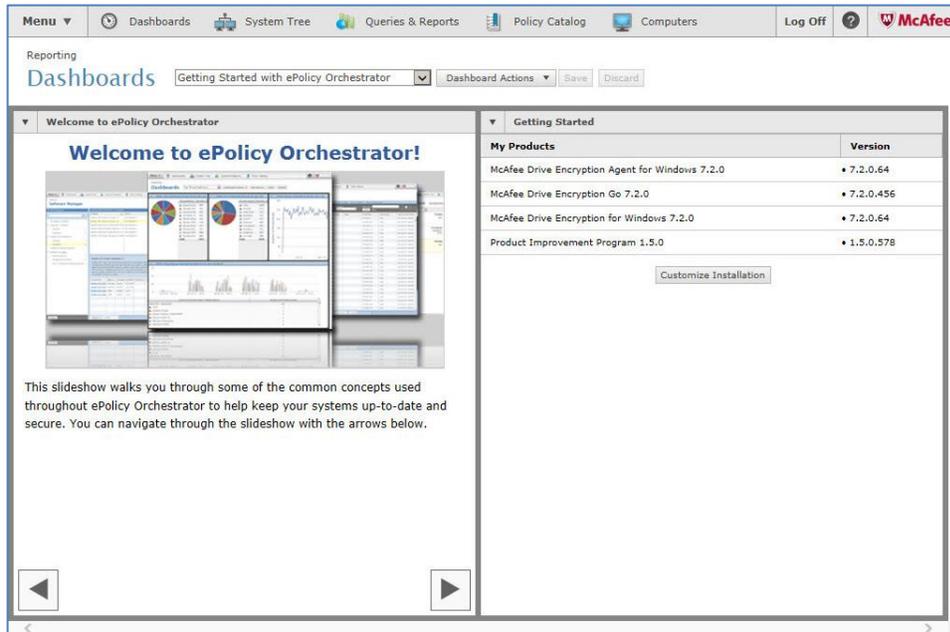
## Creating User Based Policy

1. Open the **ePolicy Orchestrator** Login page.



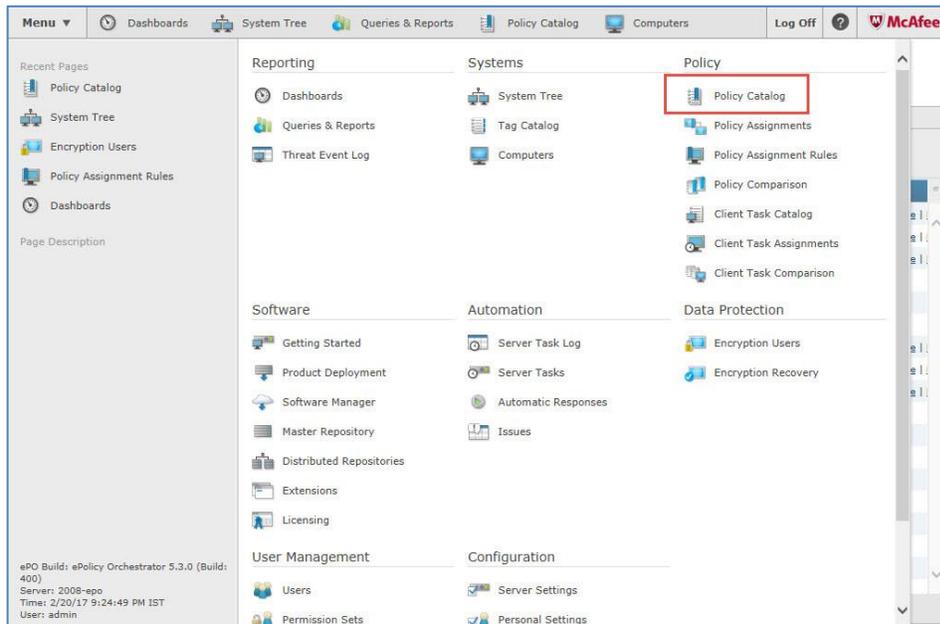
(The screen image above is from McAfee®. Trademarks are the property of their respective owners.)

2. Login to the admin console.



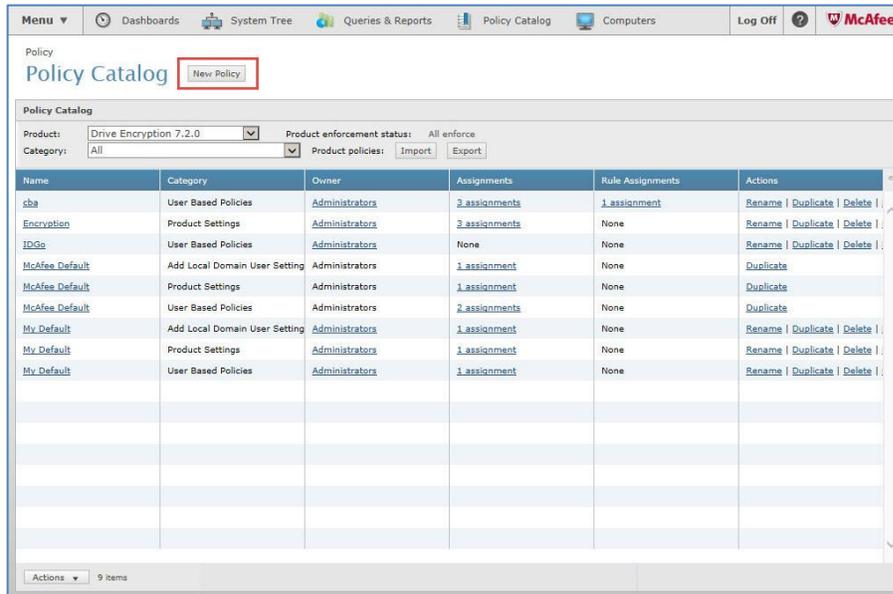
(The screen image above is from McAfee®. Trademarks are the property of their respective owners.)

3. Select Menu > Policy > Policy Catalog.



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

4. Click **New Policy**

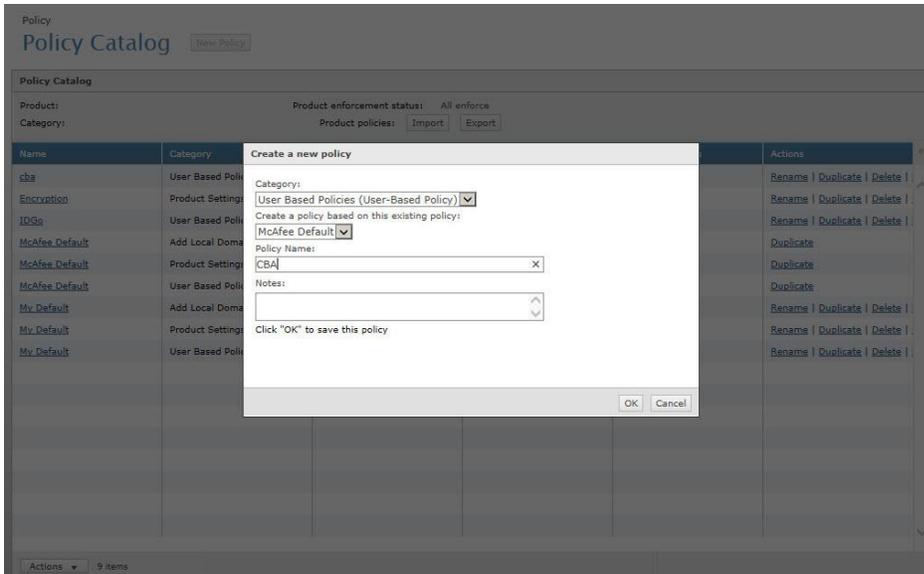


(The screen image above is from McAfee®. Trademarks are the property of their respective owners.)

The **Create a new policy** window opens.

5. Enter the fields as follows:

Field	Description
<b>Category</b>	Select <b>User Based Policies (User-Based Policy)</b> .
<b>Create a policy based on this existing policy</b>	Select a policy (Default policy is “ <b>MacAfee Default</b> ”)
<b>Policy Name</b>	Enter a name for the policy



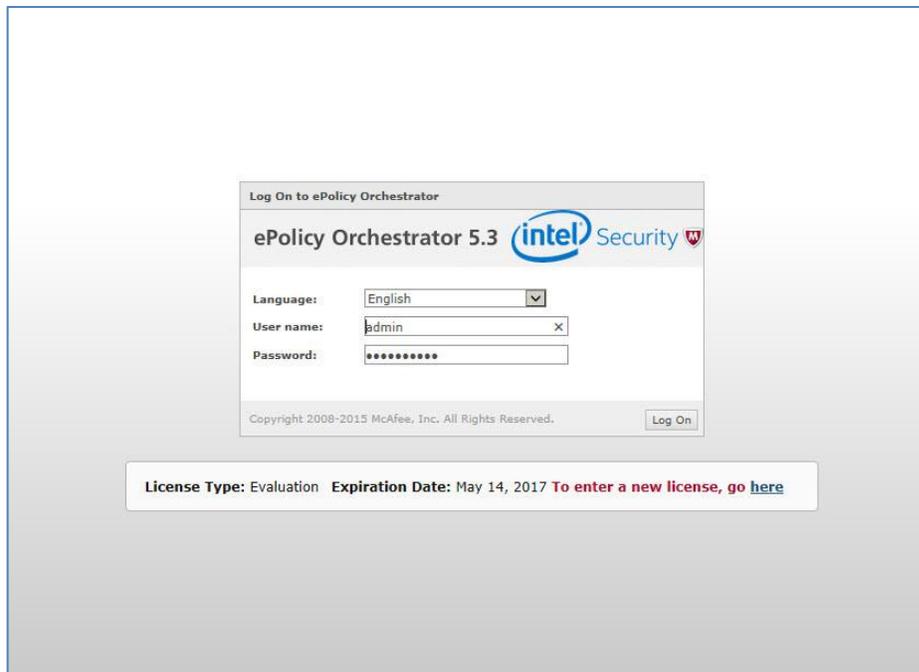
(The screen image above is from McAfee®. Trademarks are the property of their respective owners.)

6. Click **OK**.

The new policy has been added to the Policy Catalog.

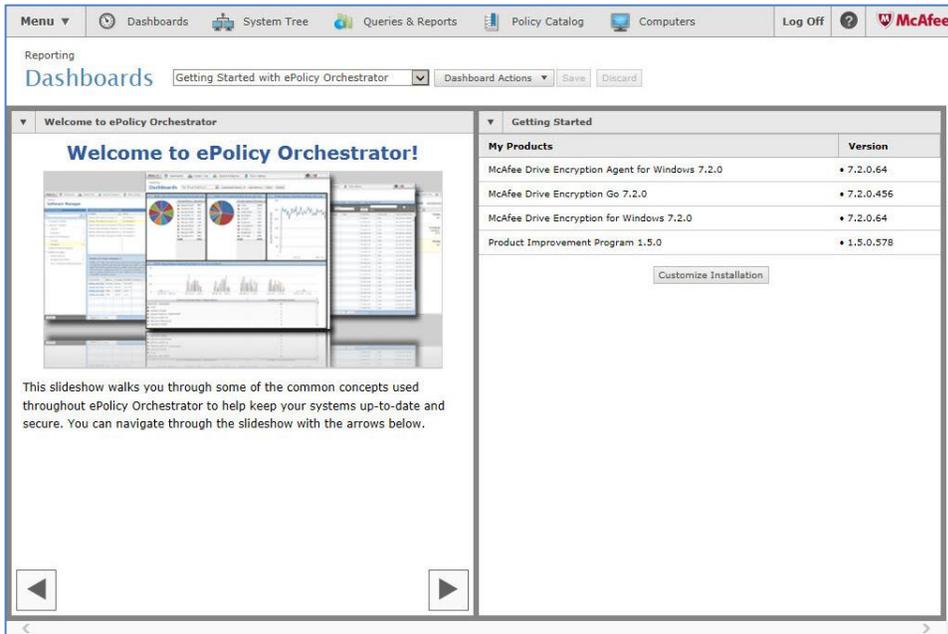
## Configuring CBA Policy

1. Open the **ePolicy Orchestrator** Login page.



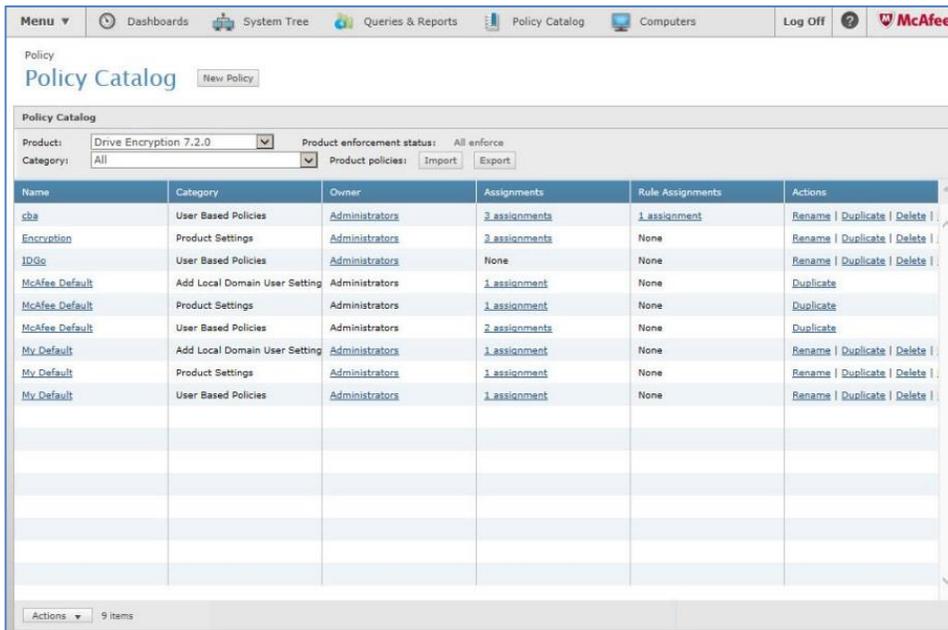
(The screen image above is from McAfee®. Trademarks are the property of their respective owners.)

2. Login to the admin console.



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

3. Select **Menu > Policy >Policy Catalog**.



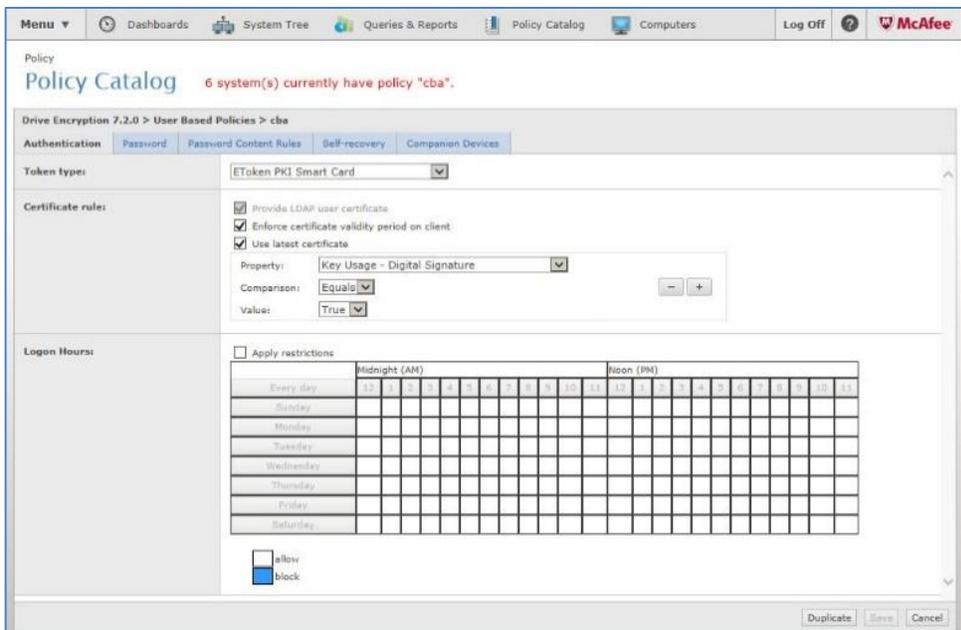
(The screen image above is from McAfee®. Trademarks are the property of their respective owners.)

4. Click the policy you created in the previous section.

The **Policy** window opens.

5. In the **Authentication** tab, configure the following:

Field	Description
Token type	Select one of the following: <ul style="list-style-type: none"> <li>EToken PKI Smart Card</li> <li>IDPrime MD PKI Smart Card</li> </ul>
Property	Select <b>Key Usage – Digital Signature</b>
Comparison	Select <b>Equals</b>
Value	Select <b>True</b>



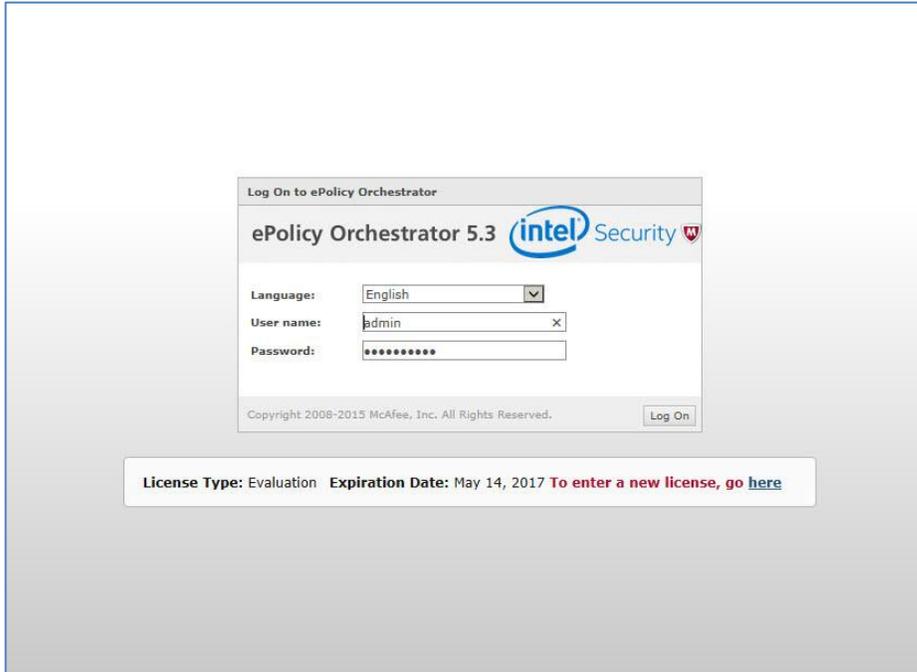
(The screen image above is from McAfee®. Trademarks are the property of their respective owners.)

6. Click **Save**.

## Configuring a Policy Assignment Rule

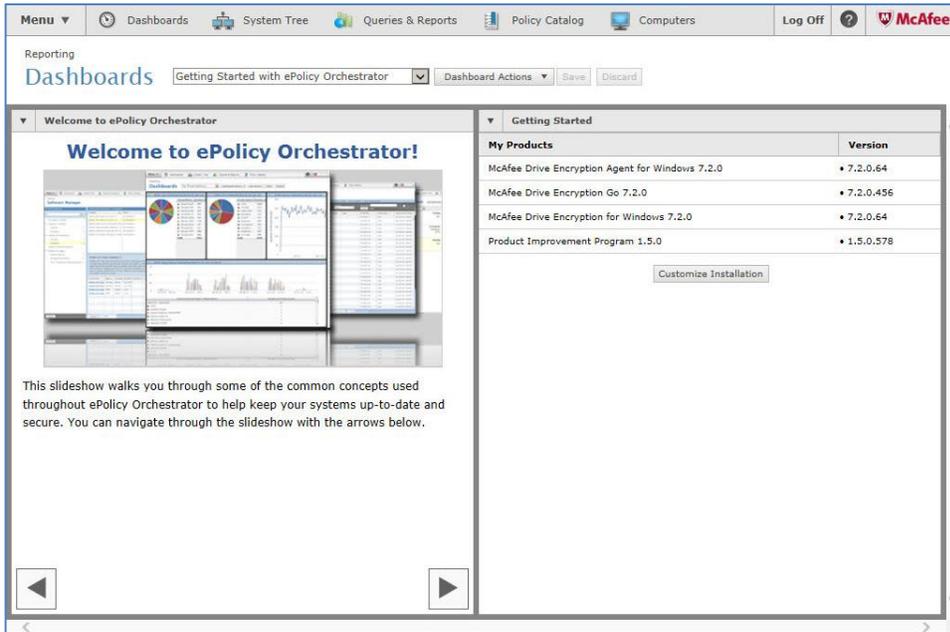
In this section we created a policy assignment rule based on username. Administrator can decide the type of policy assignment rule he wants to create.

1. Open the **ePolicy Orchestrator** Login page.



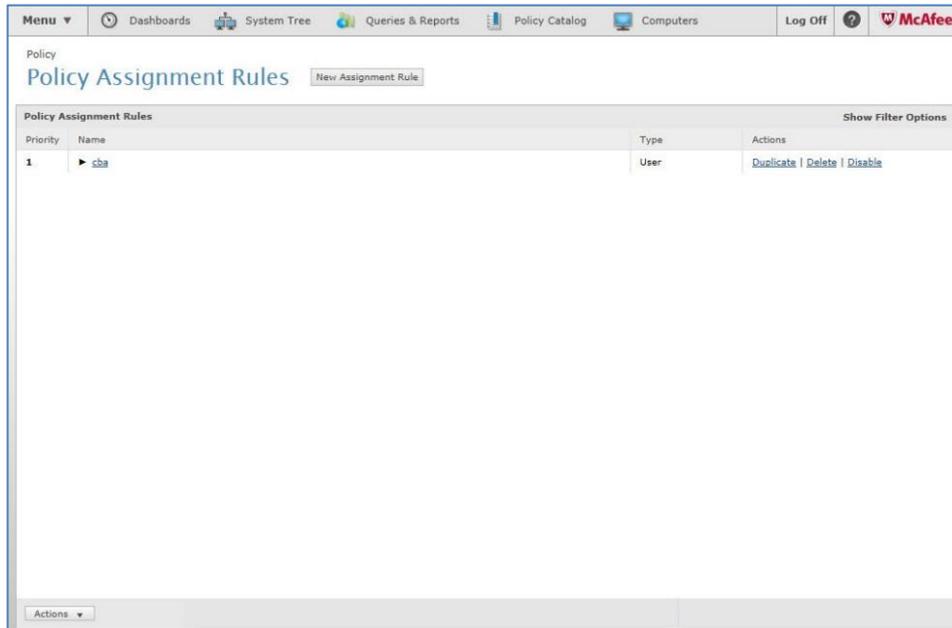
(The screen image above is from McAfee®. Trademarks are the property of their respective owners.)

2. Login to the admin console.



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

3. Select **Menu > Policy > Policy Assignment Rules**.



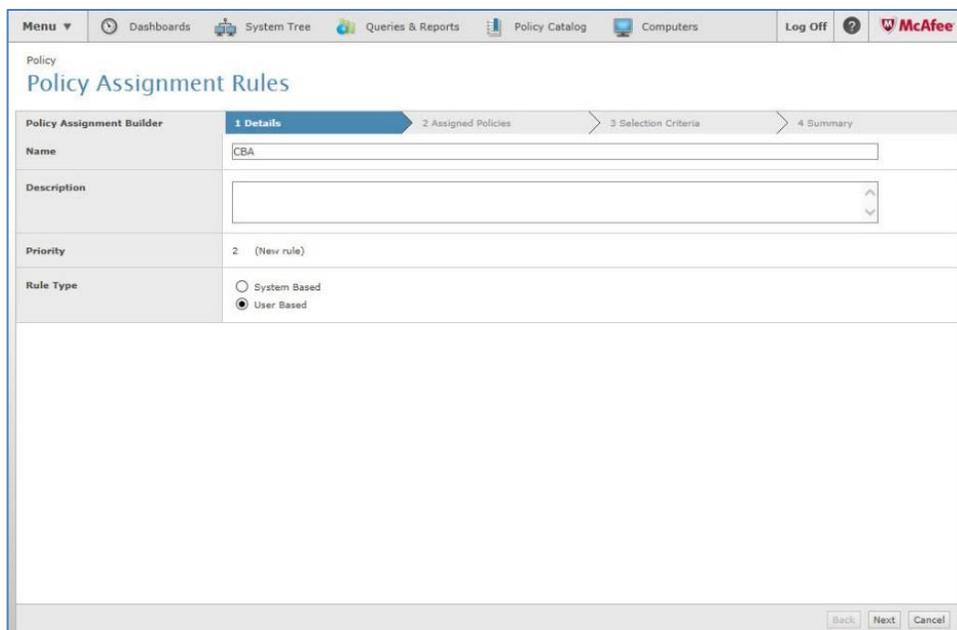
(The screen image above is from McAfee®. Trademarks are the property of their respective owners.)

4. Click on **New Assignment Rule**.

The **New Assignment Rule** window is open.

5. In the **Details** tab, configure the following:

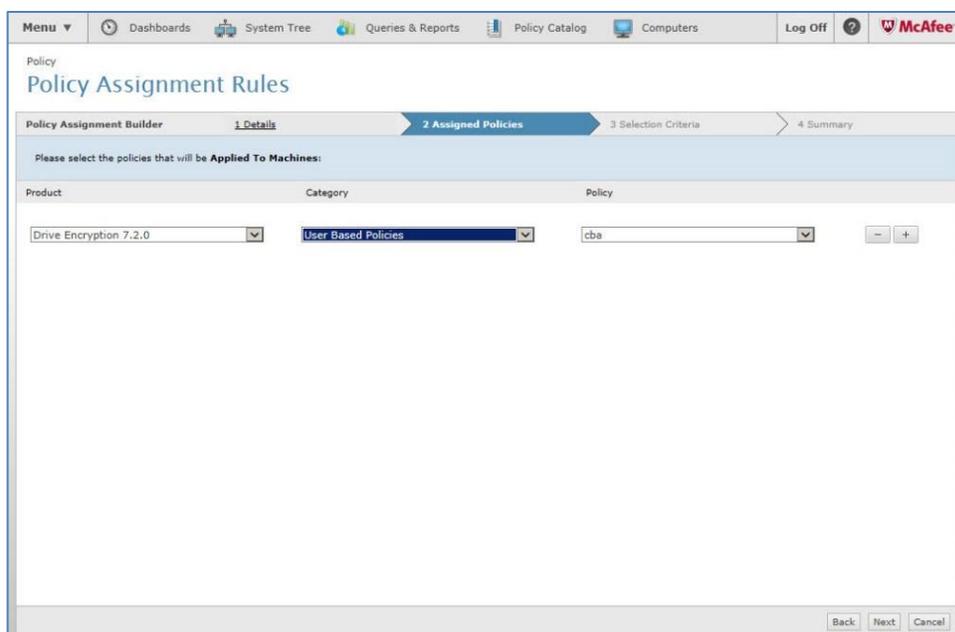
Field	Description
<b>Name</b>	Enter a name for the policy.
<b>Rule Type</b>	Select <b>User Based</b> .



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

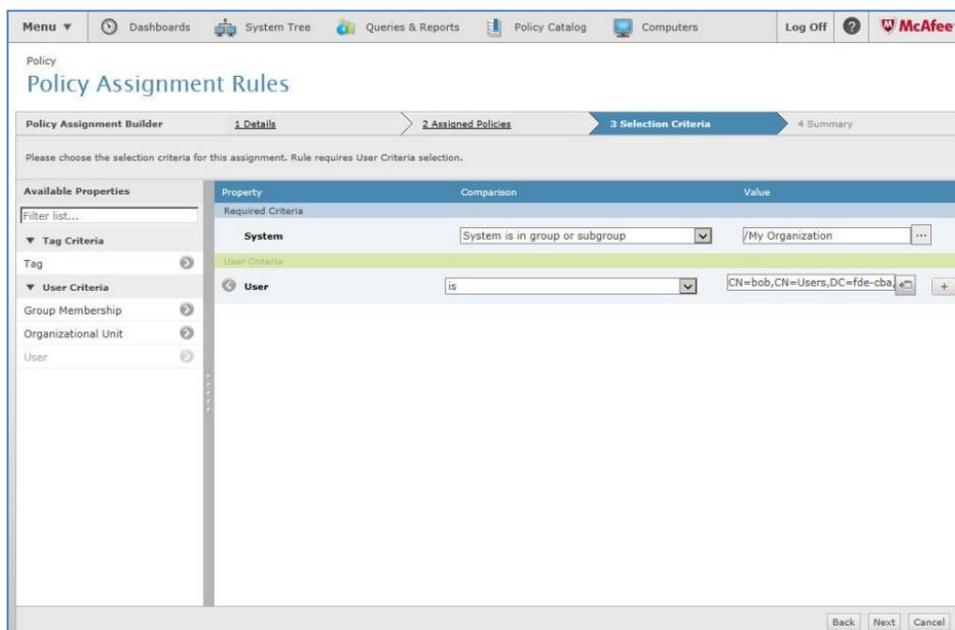
6. Click **Next**
7. In the **Assigned Policies** tab, click **Add Policy** and configure the following:

Field	Description
<b>Product</b>	Select the Drive Encryption product.
<b>Category</b>	Select <b>User Based Policies</b> .
<b>Policy</b>	Select the user-based policy you created previously.



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

8. Click **Next**.
9. In the **Selection Criteria** tab select the system you are working on.
10. Click **Users** in the left pane and in the main pane select the users to which the policy needs to be assigned.



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

11. Click **Next**

12. In the **Summary** tab, click **Save**

Policy

### Policy Assignment Rules

Policy Assignment Builder

1 Details > 2 Assigned Policies > 3 Selection Criteria > 4 Summary

Name	CBA1
Type	User
Priority	2
Description	
System Criteria	System descends from: /My Organization
Tag Criteria	No tag criteria selected
User Criteria	User is: bob
Assigned Policies	Drive Encryption 7.2.0: Drive Encryption > User Based Policies > cba

Back Save Cancel

## Assigning the Policy to a System

Now we need to assign the policy we created to the machine/machines that are already managed by the McAfee agent and that the McAfee Disk Encryption product is installed on.

1. Open the **ePolicy Orchestrator** Login page.

Log On to ePolicy Orchestrator

ePolicy Orchestrator 5.3 intel Security

Language: English

User name: admin

Password: .....

Copyright 2008-2015 McAfee, Inc. All Rights Reserved. Log On

License Type: Evaluation Expiration Date: May 14, 2017 To enter a new license, go [here](#)

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

2. Login to the admin console.

Menu Dashboards System Tree Queries & Reports Policy Catalog Computers Log Off McAfee

Reporting Dashboards Getting Started with ePolicy Orchestrator Dashboard Actions Save Discard

Welcome to ePolicy Orchestrator

Welcome to ePolicy Orchestrator!

This slideshow walks you through some of the common concepts used throughout ePolicy Orchestrator to help keep your systems up-to-date and secure. You can navigate through the slideshow with the arrows below.

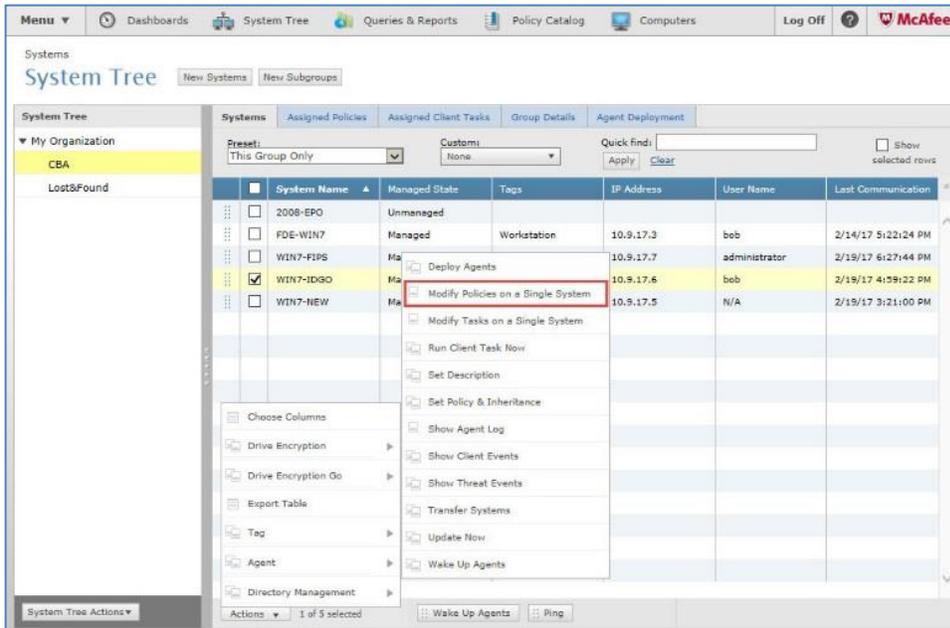
Getting Started

My Products	Version
McAfee Drive Encryption Agent for Windows 7.2.0	7.2.0.64
McAfee Drive Encryption Go 7.2.0	7.2.0.456
McAfee Drive Encryption for Windows 7.2.0	7.2.0.64
Product Improvement Program 1.5.0	1.5.0.578

Customize Installation

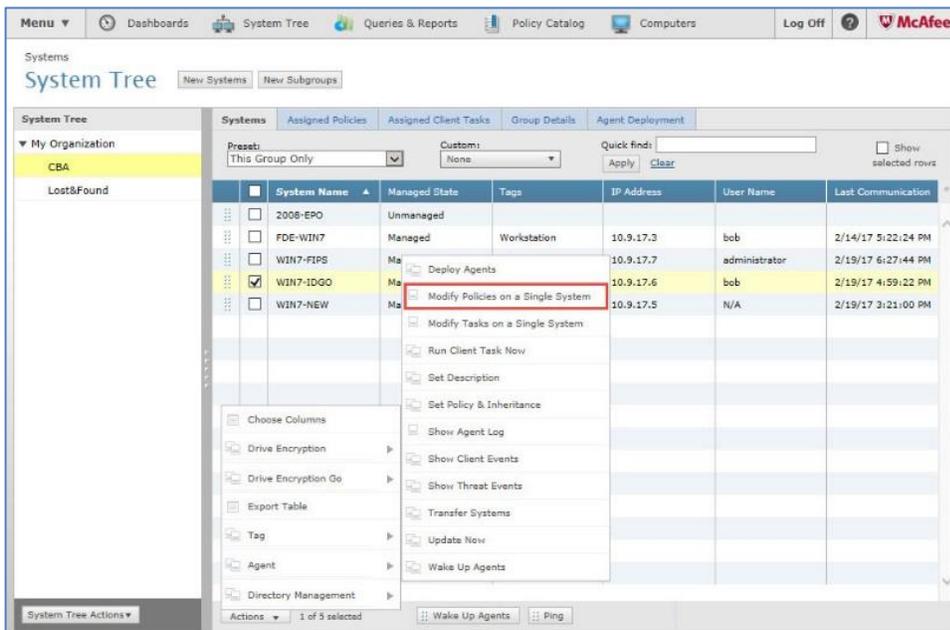
(The screen image above is from McAfee®. Trademarks are the property of their respective owners.)

3. Select **Menu > System > System Tree**.



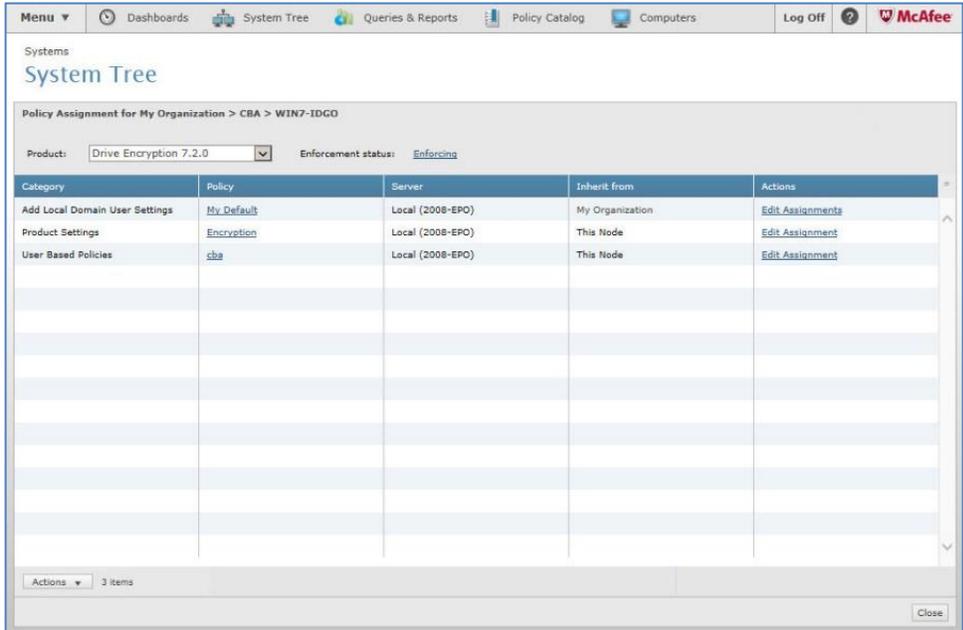
(The screen image above is from McAfee®. Trademarks are the property of their respective owners.)

4. Select the system/s upon which the CBA needs to be enforced and select **Actions > Agent > Modify Policies on a Single System**.



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

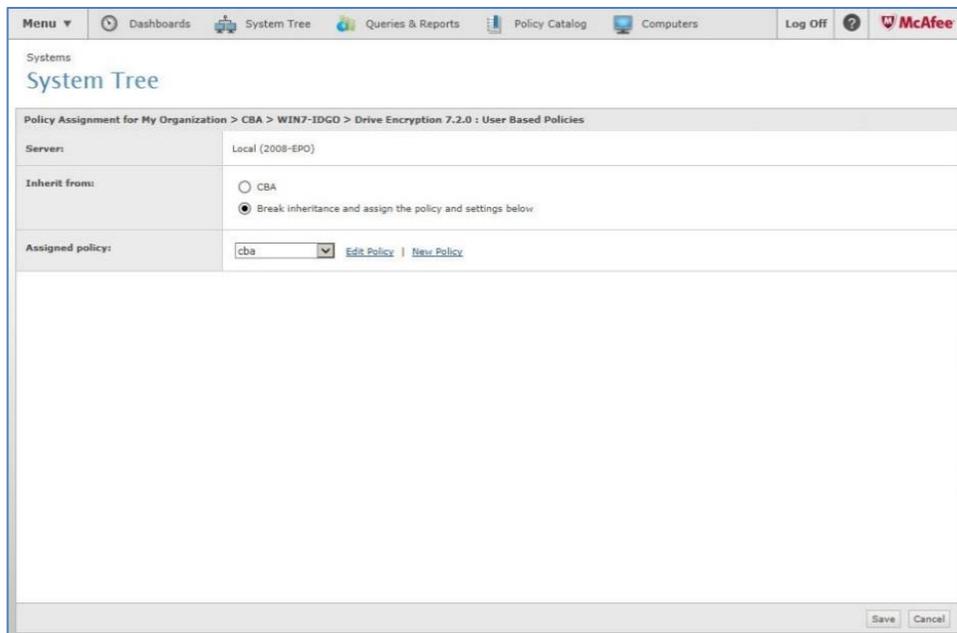
- Under **Product** select the **Drive Encryption** product.



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

- Click the User Based Policy (cba in this example) **Edit Assignment** link.  
The edit assignment window opens.
- Configure the following:

Field	Description
<b>Inherit From</b>	Select <b>Break inheritance and assign the policy and setting below.</b>
<b>Assigned policy</b>	Select the CBA policy you created.



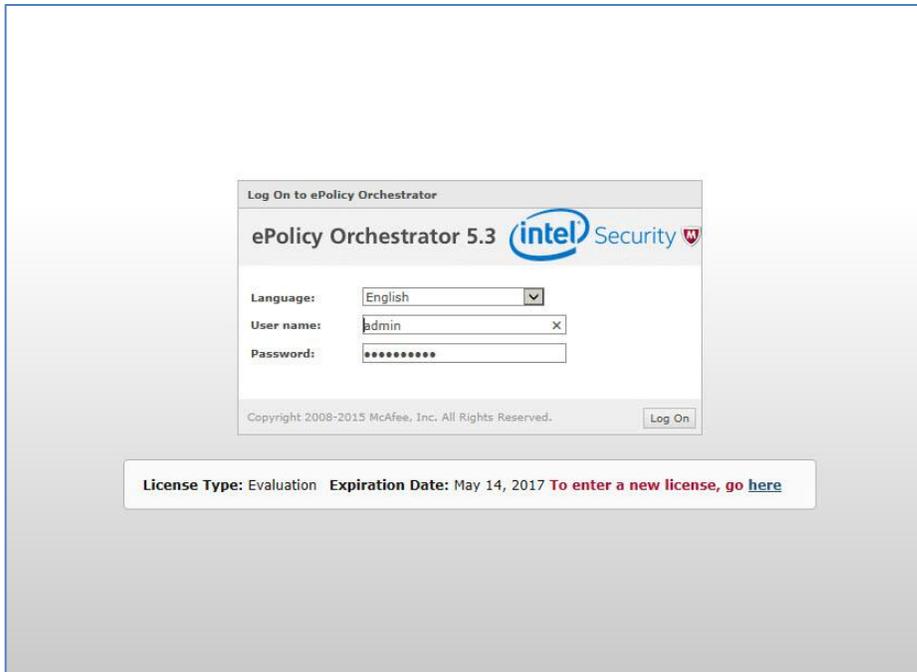
(The screen image above is from McAfee®. Trademarks are the property of their respective owners.)

8. Click **Save**.

## Configuring User-Based Policy Enforcement

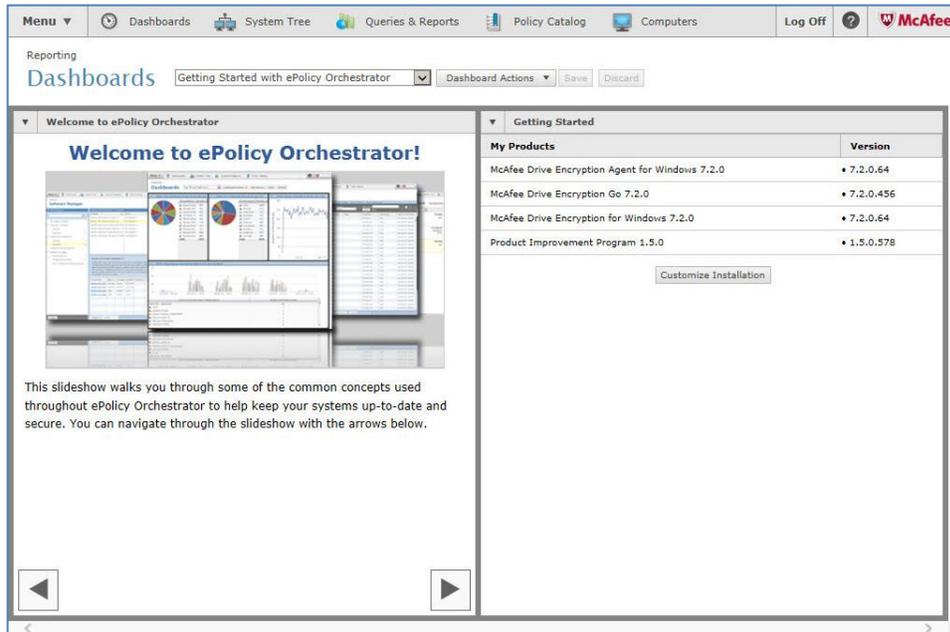
In order for the user to use the CBA policy you created it needs to be configured in the ePolicy Orchestrator.

1. Open the **ePolicy Orchestrator** Login page.



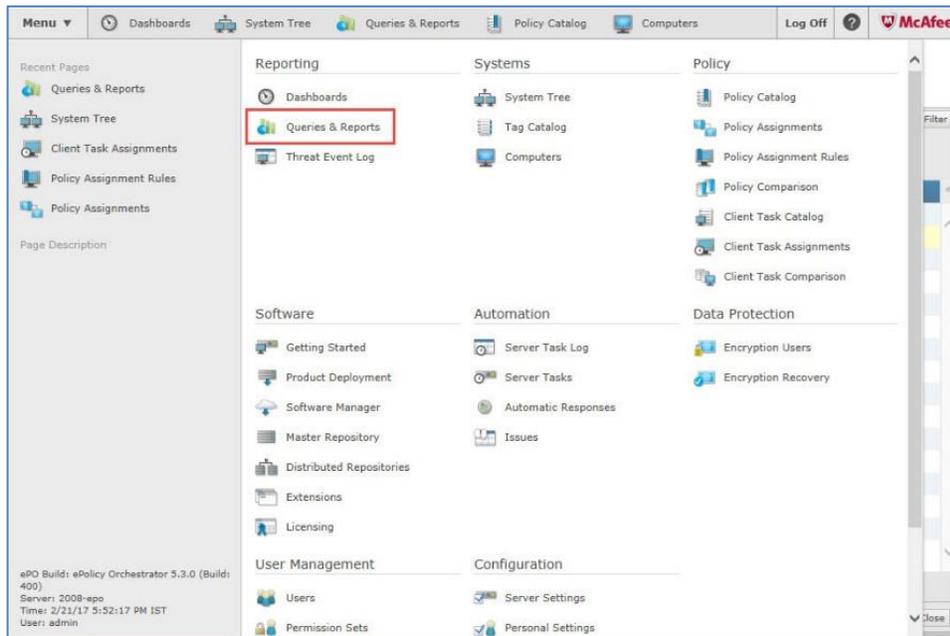
*(The screen image above is from McAfee®. Trademarks are the property of their respective owners.)*

2. Login to the admin console.



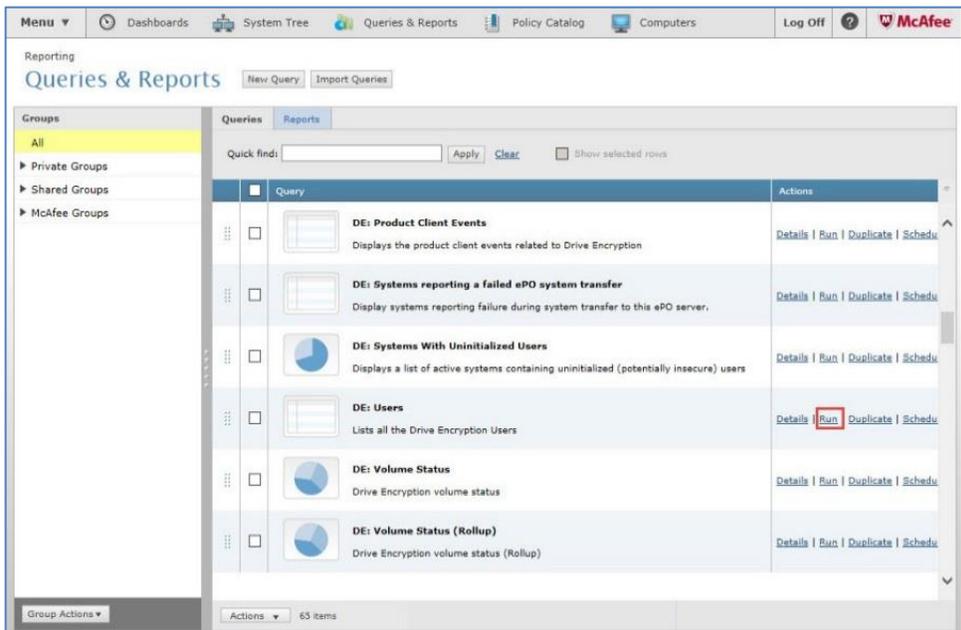
(The screen image above is from McAfee®. Trademarks are the property of their respective owners.)

3. Select **Menu >Reporting > Queries & Reports.**



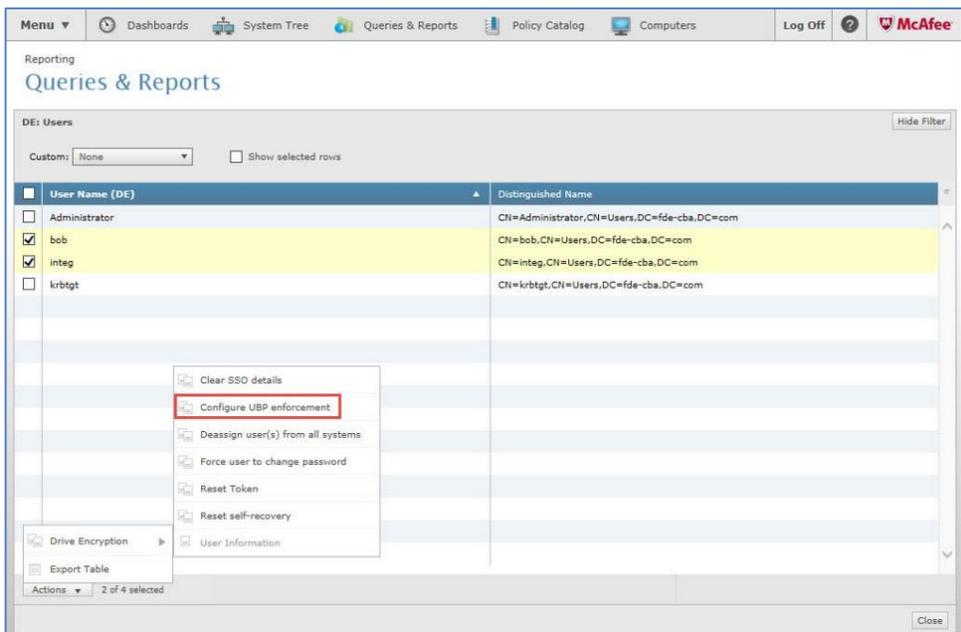
(The screen image above is from McAfee®. Trademarks are the property of their respective owners.)

4. Under **Query** select **DE: Users** and click **Run**.



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

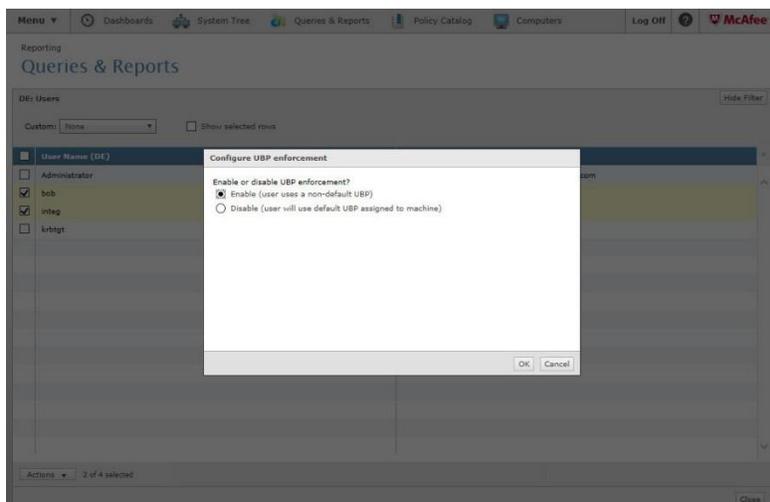
5. Select the users to be configured and select **Actions > Drive Encryption > Configure UBP enforcement**.



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

The **Configure UBP enforcement** window opens.

6. Select **Enable (user uses a non-default UBP)** and click **OK**.

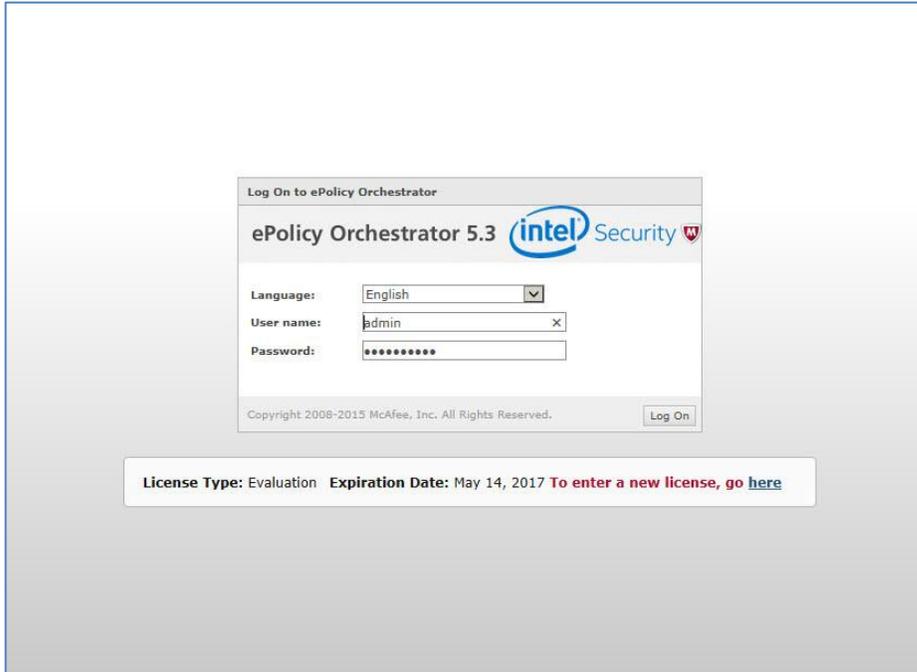


*(The screen image above is from McAfee®. Trademarks are the property of their respective owners.)*

## Update the Client Machine

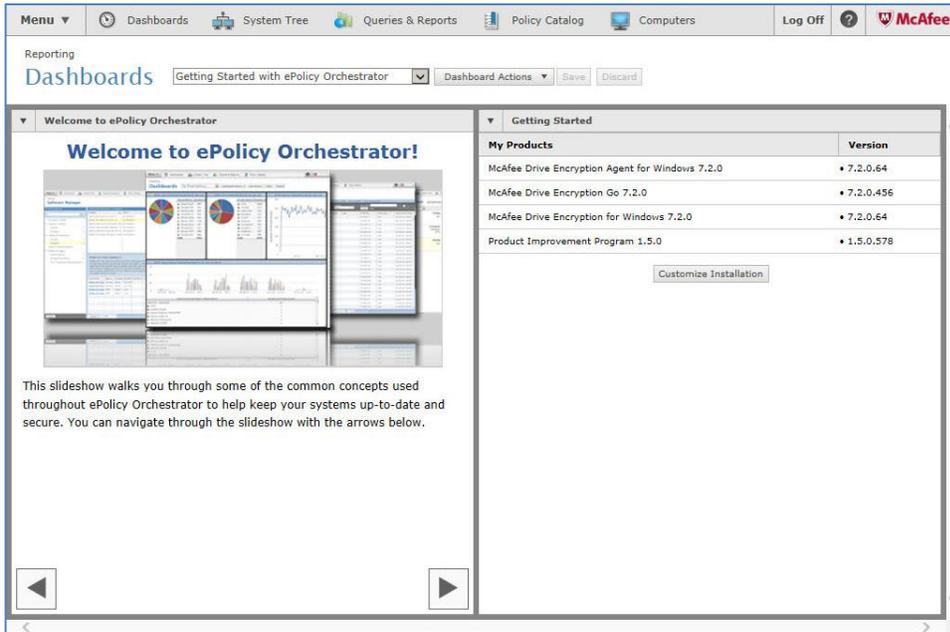
In order for the changes to take affect you need to update the client machine with the new policies.

1. Open the ePolicy Orchestrator Login page.



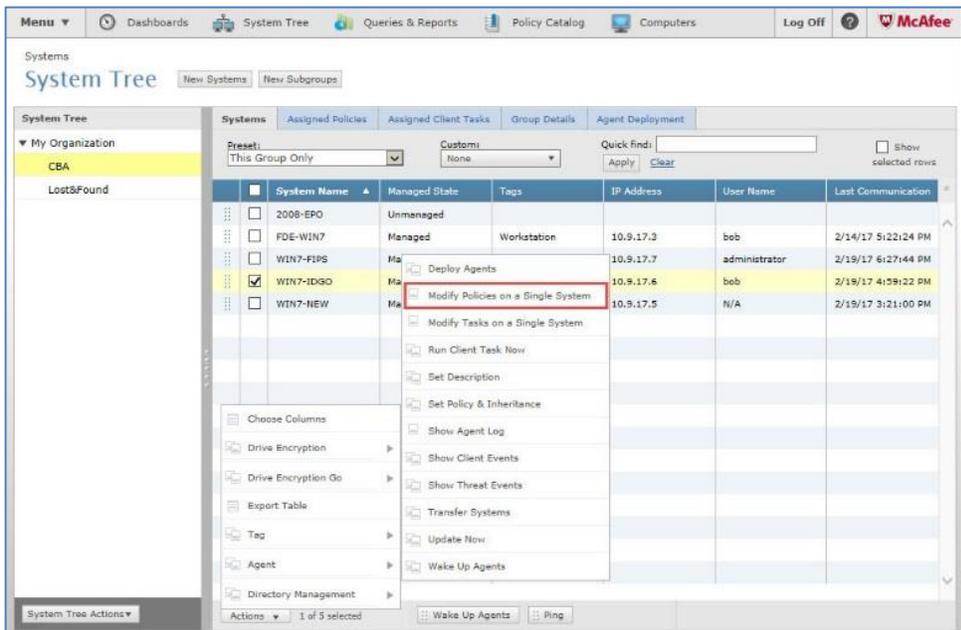
(The screen image above is from McAfee®. Trademarks are the property of their respective owners.)

2. Login to the admin console.



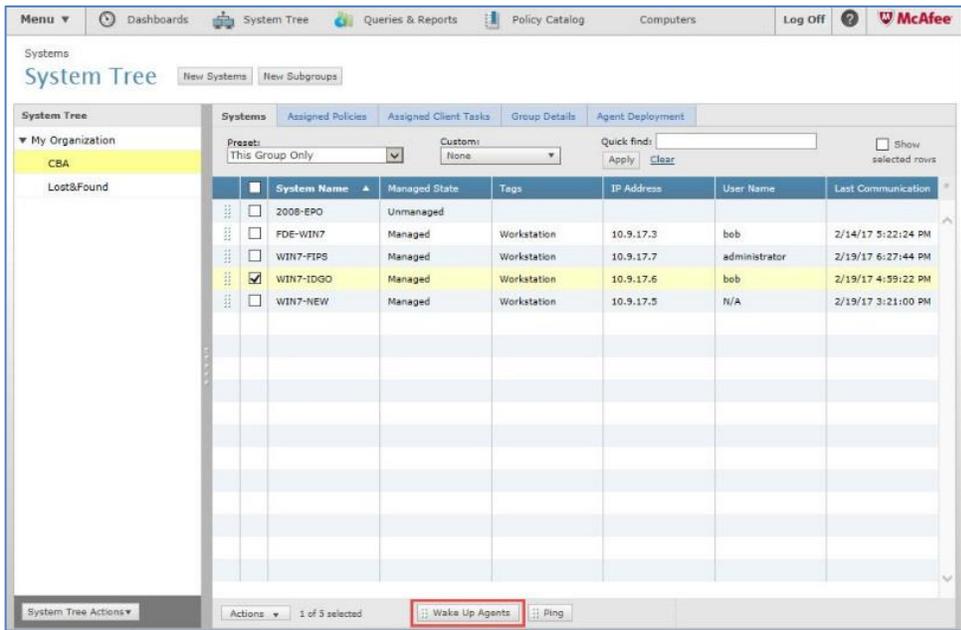
(The screen image above is from McAfee®. Trademarks are the property of their respective owners.)

3. Select **Menu > System > System Tree**.



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

4. Select the system/s on which the CBA needs to be enforced on and click **Wake Up Agents**.



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

5. Select **Force complete policy and task update**.

The screenshot shows the 'Wake Up McAfee Agent' configuration window in the McAfee console. The window title is 'Systems System Tree'. Below the title bar, there is a navigation menu with 'Menu', 'Dashboards', 'System Tree', 'Queries & Reports', 'Policy Catalog', and 'Computers'. The main content area is titled 'Wake Up McAfee Agent' and contains the following fields:

- Target systems:** WIN7-IDGO
- Wake-up call type:**  Agent Wake-Up Call,  SuperAgent Wake-Up Call
- Randomization:** 0 minutes
- Options:**  Retrieve all properties even if they haven't changed since the last time they were collected. If unchecked only retrieve changed properties.
- Force policy update:**  Force complete policy and task update
- Number of attempts:** 1 (Enter 0 for continuous attempts.)
- Retry interval:** 30 second(s)
- Abort after:** 5 minute(s)
- Wake up Agent using:**  All Agent Handlers,  Last Connected Agent Handler,  Selected Agent Handler: [dropdown]

At the bottom right of the dialog box, there are 'OK' and 'Close' buttons.

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

6. Click **OK**.

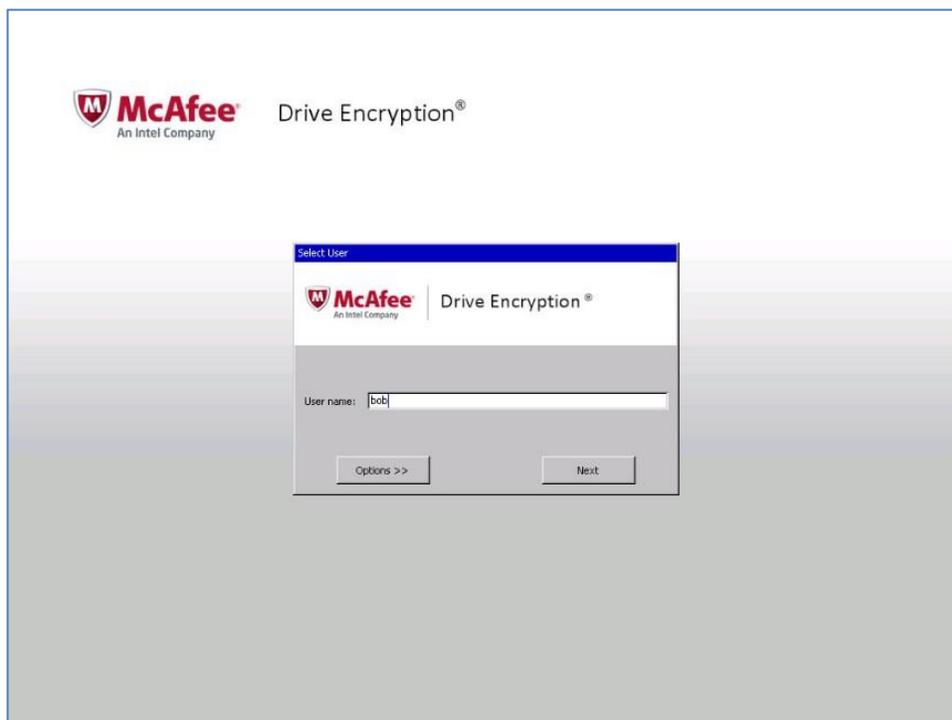
The client machine is updated.

## Running the Solution

---

This section demonstrates the pre-boot authentication process.

1. Start the client machine and insert the Gemalto token/smart card.
2. In the first screen enter the username and click **Next**.



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

3. Enter the token/smart card PIN and click **Logon**.



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

After a successful authentication the machine boots.

# 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 Gemalto Customer Support. Gemalto 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 Gemalto 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
<b>Customer Support Portal</b>	<a href="https://supportportal.gemalto.com">https://supportportal.gemalto.com</a> Existing customers with a Technical Support Customer Portal account can log in to manage incidents, get the latest software upgrades, and access the Gemalto Knowledge Base.
<b>Technical Support contact email</b>	<a href="mailto:technical.support@gemalto.com">technical.support@gemalto.com</a>