SafeNet Authentication Service
Integration Guide

Using SAS as an Identity Provider for Microsoft Dynamics CRM
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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 Microsoft Dynamics CRM.

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 Service delivers a fully automated, versatile, and strong authentication-as-a-service solution.

With no infrastructure required, SafeNet Authentication Service provides smooth management processes and highly flexible security policies, token choice, and integration APIs.

Dynamics CRM is the customer relationship management software developed by Microsoft. Out of the box, the product focuses mainly on sales, marketing, and service (helpdesk) sectors.

This document describes how to:

- Deploy multi-factor authentication (MFA) options in Microsoft Dynamics CRM using SafeNet OTP authenticators managed by SafeNet Authentication Service.
- Configure SAML authentication in Microsoft Dynamics CRM using SafeNet Authentication Service as an identity provider.

It is assumed that the Microsoft Dynamics CRM environment is already configured and working with static passwords prior to implementing multi-factor authentication using SafeNet Authentication Service.

Microsoft Dynamics CRM can be configured to support multi-factor authentication in several modes. The SAML authentication will be used for the purpose of working with SafeNet Authentication Service.

Applicability

The information in this document applies to:

- **SafeNet Authentication Service (SAS)**—SafeNet's cloud-based authentication service
- **SafeNet Authentication Service – Service Provider Edition (SAS-SPE)**—A server version that is used by Service providers to deploy instances of SafeNet Authentication Service
- **SafeNet Authentication Service – Private Cloud Edition (SAS-PCE)**—A server version that is used to deploy the solution on-premises in the organization
Environment

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

- **SafeNet Authentication Service (SAS)**—SafeNet’s cloud-based authentication service
- **Microsoft Dynamics CRM Server 2015**
- **AD FS**—in Windows Server® 2012 R2
- **Gemalto SAS Agent for AD FS**—Version 2.0

Audience

This document is targeted to system administrators who are familiar with Microsoft Dynamics CRM, and are interested in adding multi-factor authentication capabilities using SafeNet Authentication Service.

SAS Authentication API using SAS Cloud

SAS Cloud provides a service for SAS Authentication API that is already implemented in the SAS Cloud environment and can be used using the Gemalto SAS Agent for AD FS.

SAS Authentication API using SAS-SPE and SAS-PCE

In addition to the pure cloud-based offering, SafeNet Authentication Service comes with two on-premises versions:

- **SafeNet Authentication Service – Service Provider Edition (SPE)**—An on-premises version of SafeNet Authentication Service targeted at service providers interested in hosting SAS in their data center.
- **SafeNet Authentication Service – Private Cloud Edition (PCE)**—An on-premises version of SafeNet Authentication Service targeted at organizations interested in hosting SAS in their private cloud environment.

For both on-premises versions, SAS can be integrated with AD FS infrastructure, which uses a special on-premises agent called Gemalto SAS Agent for AD FS.
SAS Authentication API Flow using SAS

AD FS provides extensible multi-factor authentication through the concept of “additional authentication providers” that are invoked during secondary authentication. External providers can be registered in AD FS.

Once a provider is registered with AD FS, it is invoked from the AD FS authentication code via specific interfaces and methods that the provider implements and that AD FS calls. Because it provides a bridge between AD FS and an external authentication provider, the external authentication provider is also called an AD FS MFA “adapter”.

Gemalto SAS Agent for AD FS is an AD FS MFA adapter that provides users a way to authenticate through AD FS using SAS as a secondary authenticator.

The image below describes the dataflow of a multi-factor authentication transaction for Microsoft Dynamics CRM.

1. A user attempts Sign in to Microsoft Dynamics CRM. The user is redirected AD FS proxy server (WAP), then after successful authentication, is forwarded to SafeNet Authentication Service (SAS) for a secondary authentication (AD FS multi-factor authentication).
2. The user uses his SAS token for authenticating. SAS collects and evaluates the user’s credentials.
3. The SAS authentication reply is sent back to AD FS which returns a response to Microsoft Dynamics CRM, accepting or rejecting the user’s authentication request.
4. The user is granted or denied access to Microsoft Dynamics CRM.

Prerequisites

- Ensure that you have a public wildcard certificate matching to your domain name (for example, *.safenetdemos.com).
- Certificate Authority goes to Trusted Root Certification Authorities and the wildcard certificate goes into the Personal store.
- Ensure that the public wildcard certificate *.<domain name.com> (for example, *.safenetdemos.com) is:
  - Installed in the certificate Personal store, the Trusted Root Authorities store in the AD FS machine, and the Dynamics CRM machine with a private key.
  - Bound to separate ports in IIS (for example, port 444 for Microsoft Dynamics CRM and port 443 for AD FS).
Configuring Microsoft Dynamics CRM

Configuring Microsoft Dynamics CRM requires the following:

- Configuring Root Domain Web Address in CRM, page 7
- Configuring CRM Server for Claims-based Authentication, page 9
- Configuring Active Directory Security Groups, page 13
- Kernel-mode Authentication, page 19
- Configuring Claims Provider Trusts in AD FS, page 23
- Configuring AD FS Replying Party Trust for Claims-based Authentication, page 26
- Configuring Internet Facing Deployment on the CRM Server, page 35
- Configuring AD FS Relying Party Trust for the Internet Facing Deployment, page 46

Configuring Root Domain Web Address in CRM

Bind the Microsoft Dynamics CRM server to HTTPS, and configure the root domain web address. Also, configure the internal URL for CRM. Users can use this URL, if they want to access CRM within the network without being prompted for credentials.

1. Open Microsoft Dynamics CRM Deployment Manager.
2. On the Microsoft Dynamics CRM main window, in the left pane, right-click Microsoft Dynamics CRM, and then select Properties.

(The screen image above is from Microsoft® software. Trademarks are the property of their respective owners.)
3. On the **Microsoft Dynamics CRM Properties** window, on the **Web Address** tab, complete the following fields, and then click **OK**.

<table>
<thead>
<tr>
<th>Binding Type</th>
<th>Select HTTPS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Web Application Server</td>
<td>Enter &lt;Internal URL used to access Microsoft Dynamics CRM&gt;;&lt;Port&gt; (for example, internalcrm.safenetdmeos.com:444).</td>
</tr>
<tr>
<td>Organization Web Service</td>
<td>Enter &lt;Internal URL used to access Microsoft Dynamics CRM&gt;;&lt;Port&gt; (for example, internalcrm.safenetdmeos.com:444).</td>
</tr>
<tr>
<td>Discovery Web Service</td>
<td>Enter &lt;Internal URL used to access Microsoft Dynamics CRM&gt;;&lt;Port&gt; (for example, internalcrm.safenetdmeos.com:444).</td>
</tr>
<tr>
<td>Deployment Web Service</td>
<td>Enter &lt;Internal URL used to access Microsoft Dynamics CRM&gt;;&lt;Port&gt; (for example, internalcrm.safenetdmeos.com:444).</td>
</tr>
</tbody>
</table>

**NOTE:**
- <Internal URL used to access Microsoft Dynamics CRM> refers to the URL that users can use if they want to access CRM within the network without being prompted for credentials.
- <Port> refers to the SSL port bound to the Microsoft Dynamics CRM website (for example, 444).

(The screen image above is from Microsoft® software. Trademarks are the property of their respective owners.)
Configuring CRM Server for Claims-based Authentication

Claims-based authentication is a set of WS-* standards describing the use of a Security Assertion Markup Language (SAML) token. Claims-based authentication requires the availability of a security token service (STS) running on a server. An STS server can be based on Active Directory Federation Services (AD FS) or any platform that provides the official STS protocol.

1. On the Microsoft Dynamics CRM main window, in the left pane, right-click Microsoft Dynamics CRM, and then select Configure Claims-Based Authentication.

2. On the Configure Claims-Based Authentication Wizard window, click Next.

(The screen image above is from Microsoft® software. Trademarks are the property of their respective owners.)
3. In the **Federation metadata URL** field, enter the federation metadata URL (for example, https://<FQDN of AD FS server>/federationmetadata/2007-06/federationmetadata.xml), and then click **Next**.

**NOTE:** The federation metadata URL is from the AD FS 3.0 federation server, which is configured by default to publish metadata describing itself via HTTPS.

To verify the correct URL, open Internet Explorer in the AD FS 3.0 server and view the federation metadata by using the above URL. Verify that no certificate-related warnings appear.

4. Click **Select**.

(The screen image above is from Microsoft® software. Trademarks are the property of their respective owners.)
5. On the **Windows Security** window, select the public wildcard certificate (for example, *.<domain name.com>) as mentioned in “Prerequisites” on page 6, and then click **OK**.

![Windows Security Window](image)

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

6. Click **Next**.

![Configure Claims-Based Authentication Wizard](image)

(The screen image above is from Microsoft® software. Trademarks are the property of their respective owners.)
7. Review the results, fix problems if required, and then click **Next**.

8. Review your selections and then click **Apply**.

(The screen image above is from Microsoft® software. Trademarks are the property of their respective owners.)
9. Click the View the log file link, scroll to the bottom of the log file, copy the Federation metadata URL, and then click Finish. The URL will be used in “Configuring AD FS Replying Party Trust for Claims-based Authentication” on page 27.

![Configure Claims-Based Authentication Wizard](image)

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

**Configuring Active Directory Security Groups**

While installing Dynamics CRM 2015, the following Active Directory (AD) security groups also get installed:

- PrivReportingGroup
- SQLAccessGroup
- ReportingGroup
- PrivUserGroup

For all the four AD security groups, you need to grant permissions to the following accounts:

- CRM server account
- Administration account
- Application pool account
Locating the CRMApPool Account

You can use IIS Manager to determine which account was used during setting up the CRMApPool account.

1. From the Start menu, open the Internet Information Services (IIS) console.
2. In the left pane, expand the organization node (for example, CRMSERVER), and then select Application Pools.

In the right pane, the CRMApPool application pool is listed. For the CRMApPool application pool, note down the account name from the Identity column (for example, SAFENETDEMO\TESTUSER1).

Granting Permissions in the AD Security Groups

To allow access to the internal URL of Dynamics CRM, grant the Read and Write permissions to the following accounts for the four security groups in the Active Directory:

- CRM server account
- Administration account
- Application pool account

1. From the Start menu, open Active Directory Users and Computers.
2. On the Active Directory Users and Computers window, in the left pane, expand the domain name as per your environment (for example, safenetdemos.com), and then select the organizational account for Dynamics CRM created at the time of CRM installation (for example, CRM 2015).
3. In the right page, right-click **PrivReportingGroup**, and then select **Properties**.

![Active Directory Users and Computers](image1)

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

4. On the **PrivReportingGroup** window, click the **Security** tab, and then click **Add**.

![PrivReportingGroup](image2)

(The screen image above is from Microsoft® software. Trademarks are the property of their respective owners.)
5. On the **Select Users, Computers, Service Accounts, Or Groups** window, under the **Enter the Object names to select** box, enter the name of the CRMAppPool user (for example, **testuser1**), click **Check Names**, and then click **OK**.

![Select Users, Computers, Service Accounts, or Groups](image1)

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

6. On the **Security** tab, perform the following steps:
   a. Under **Group or user names**, select the newly added user (for example, **testuser1**).
   b. Under **Permissions for testuser1**, in the **Allow** column, select the box for the **Write** permission.
   c. Click **OK**.

![PrivReportingGroup](image2)

(The screen image above is from Microsoft® software. Trademarks are the property of their respective owners.)
7. Repeat steps 3 to 4.
8. On the Select Users, Computers, Service Accounts, Or Groups window, click Object Types.

9. On the Object Types window, select the box for Computers, and then click OK.

10. Under the Enter the Object names to select box, enter the name of your CRM Server (for example, CRMSERVER), click Check Names, and then click OK.
11. On the **Security** tab, perform the following steps:
   a. Under **Group or user names**, select the newly added computer (for example, CRMSERVER).
   b. Under **Permissions for CRMSERVER**, in the **Allow** column, select the box for the **Write** permission.
   c. Click **OK**.

![Security settings screenshot](image1.png)

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

12. Repeat steps 3 to 4.

13. On the **Select Users, Computers, Service Accounts, Or Groups** window, under the **Enter the Object names to select** box, enter the name of the administrator account (for example, Administrator), click **Check Names**, and then click **OK**.

![Select users, groups, service accounts screenshot](image2.png)

(The screen image above is from Microsoft® software. Trademarks are the property of their respective owners.)
14. On the **Security** tab, perform the following steps:
   a. Under **Group or user names**, select the newly added administrator account (for example, **Administrator**).
   b. Under **Permissions for Administrator**, in the **Allow** column, select the boxes for the **Full Control**, **Read**, and **Write** permissions.
   c. Click **OK**.

![Screen image of Security tab with permissions settings](image)

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

15. Repeat steps 1 to 14 for the remaining security groups:
   - **SQLAccessGroup**
   - **ReportingGroup**
   - **PrivUserGroup**

**Kernel-mode Authentication**

Internet Information Services (IIS) 7.0 enables kernel-mode authentication by default, and this authentication runs under the machine account. However, Microsoft Dynamics CRM can be configured to run under a domain account, so Kerberos service ticket decryption will fail if kernel mode authentication is enabled.

To determine if a Microsoft Dynamics CRM deployment is using kernel-mode authentication, perform the following steps:

1. From the **Start** menu, open the **Internet Information Services (IIS)** console.
2. In the left pane, under **Connections**, expand the organization node (for example, **CRMSERVER**), and then click **Sites > Microsoft Dynamics CRM**.
3. In the right pane, under IIS, double-click **Authentication**.

![IIS Authentication Configuration](image1.png)

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

4. Select **Windows Authentication**, and then in the right pane, under **Actions**, click **Advanced Settings**.

![Windows Authentication Settings](image2.png)

*(The screen image above is from Microsoft® software. Trademarks are the property of their respective owners.)*
5. On the Advanced Settings window, if Enable Kernel-mode authentication is selected, it means that the deployment is using kernel-mode authentication. Click Cancel.

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

Configuring IIS for useAppPoolCredentials

If Kernel-mode authentication is enabled and domain account is used as the CRM application pool identity, configure IIS to useAppPoolCredentials.

1. From the Start menu, open the Internet Information Services (IIS) console.
2. In the left pane, under Connections, expand the organization node (for example, CRMSERVER), and then click Sites > Microsoft Dynamics CRM.
3. In the right pane, under Management, double-click Configuration Editor.

(The screen image above is from Microsoft® software. Trademarks are the property of their respective owners.)
4. In the **Configuration Editor** pane, in the **Section** field, click system.web.Server> Security > authentication > windowsAuthentication.

![Configuration Editor](image1)

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

5. In the **useAppPoolCredentials** row, select **True**.

![Configuration Editor](image2)

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

6. In the right pane, under **Actions**, click **Apply**.

![Configuration Editor](image3)

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

7. From the **Start** menu, open **Run**.
8. On the **Run** window, in the **Open** field, enter *iisreset*, and then click **OK**.

![Run window](image)

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

**Configuring Claims Provider Trusts in AD FS**

Add a claims rule to retrieve the user principal name (UPN) attribute from Active Directory and send it to Microsoft Dynamics CRM as a UPN.

1. From the **Start** menu, open **AD FS Deployment Manager**.
2. In the left pane, expand **AD FS > Trust Relationships**, and then click **Claims Provider Trusts**.
3. In the middle pane, right-click **Active Directory**, and then click **Edit Claim Rules**.

![AD FS](image)

(The screen image above is from Microsoft® software. Trademarks are the property of their respective owners.)
4. On the **Edit Claim Rules for Active Directory** window, click **Add Rule**.

![Edit Claim Rules for Active Directory](image1.png)

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

5. On the **Add Transform Claim Rule Wizard** window, in the **Claim rule template** field, select **Send LDAP Attributes as Claims**, and then click **Next**.

![Add Transform Claim Rule Wizard](image2.png)

(The screen image above is from Microsoft® software. Trademarks are the property of their respective owners.)
6. Complete the following fields, and then click **Finish**.

<table>
<thead>
<tr>
<th><strong>Claim rule name</strong></th>
<th>Enter a name for the claim rule (for example, <strong>UPN Claim Rule</strong>).</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Attribute store</strong></td>
<td>Select <strong>Active Directory</strong>.</td>
</tr>
<tr>
<td><strong>LDAP Attribute</strong></td>
<td>Select <strong>User Principal Name</strong>.</td>
</tr>
<tr>
<td><strong>Outgoing Claim Type</strong></td>
<td>Select <strong>UPN</strong>.</td>
</tr>
</tbody>
</table>

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

7. On the **Edit Claim Rules for Active Directory** window, click **OK**.

(The screen image above is from Microsoft® software. Trademarks are the property of their respective owners.)
Configuring AD FS Replying Party Trust for Claims-based Authentication

Configure Microsoft Dynamics CRM Server 2015 as a relying party to consume claims from AD FS 3.0 for authenticating internal claims access.

1. From the Start menu, open AD FS Deployment Manager.
2. In the left pane, expand AD FS > Trust Relationships. Then, right-click Relying Party Trusts and select Add Relying Party Trust.

3. On the Welcome window, click Start.
4. On the **Select Data Source** window, perform the following steps:
   a. Select **Import data about the relying party published online or on a local network**.
   b. In the **Federation metadata address** field, enter the federation metadata URL configured for claims-based authentication.
      
      This is the URL you copied earlier from the log file in “Configuring CRM Server for Claims-based Authentication” on page 9.
   
   c. Click **Next**.

(The screen image above is from Microsoft® software. Trademarks are the property of their respective owners.)
5. On the **Specify Display Name** window, in the **Display name** field, a name is displayed automatically. Click **Next**.

6. On the **Configure Multi-factor Authentication Now** window, click **Next**.
7. On the **Choose Issuance Authorization Rules** window, select **Permit all users to access this relying party**, and then click **Next**.

8. On the **Ready to Add Trust** window, click **Next**.
9. On the **Finish** window, click **Close**.

![Add Relying Party Trust Wizard](image)

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

10. On the **Edit Claim Rules for internalcrm.safenetdemos.com** window, click **Add Rule**.

![Edit Claim Rules](image)

(The screen image above is from Microsoft® software. Trademarks are the property of their respective owners.)
11. On the **Select Rule Template** window, in the **Claim rule template** field, select **Pass Through or Filter an Incoming Claim**, and then click **Next**.

![Select Rule Template](image1.png)

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

12. On the **Configure Rule** window, complete the following fields, and then click **Finish**:

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Claim rule name</td>
<td>Enter a name for the claim rule (for example, <strong>Pass Through UPN</strong>).</td>
</tr>
<tr>
<td>Incoming claim type</td>
<td>Select <strong>UPN</strong>.</td>
</tr>
</tbody>
</table>

![Configure Rule](image2.png)

*(The screen image above is from Microsoft® software. Trademarks are the property of their respective owners.)*
13. On the **Edit Claim Rules for internalcrm.safenetdemos.com** window, click **Add Rule**.

![Edit Claim Rules](image1.png)

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

14. On the **Select Rule Template** window, in the **Claim rule template** field, select **Pass Through or Filter an Incoming Claim**, and then click **Next**.

![Select Rule Template](image2.png)

(The screen image above is from Microsoft® software. Trademarks are the property of their respective owners.)
15. On the **Configure Rule** window, complete the following fields, and then click **Finish**:

<table>
<thead>
<tr>
<th>Claim rule name</th>
<th>Enter a name for the claim rule (for example, Pass Through Primary SID).</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incoming claim type</td>
<td>Select Primary SID.</td>
</tr>
</tbody>
</table>

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

16. On the **Edit Claim Rules for internalcrm.safenetdemos.com** window, click **Add Rule**.

(The screen image above is from Microsoft® software. Trademarks are the property of their respective owners.)
17. On the Select Rule Template window, in the Claim rule template field, select Transform an Incoming Claim, and then click Next.

![Select Rule Template](image)

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

18. On the Configure Rule window, complete the following fields, and then click Finish:

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Claim rule name</td>
<td>Enter a name for the claim rule (for example, Transform Windows Account Name to Name).</td>
</tr>
<tr>
<td>Incoming claim type</td>
<td>Select Windows Account Name.</td>
</tr>
<tr>
<td>Outgoing claim type</td>
<td>Select *Name.</td>
</tr>
</tbody>
</table>

![Configure Rule](image)

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

![Edit Claim Rules for internalcrmsafenetdemos.com](image)

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

**Configuring Internet Facing Deployment on the CRM Server**

Configuring an IFD enables access to Microsoft Dynamics CRM from the Internet, outside the company firewall, without using a virtual private network (VPN) solution. Microsoft Dynamics CRM configured for Internet access uses claims-based authentication to verify credentials of external users.

1. On the **Microsoft Dynamics CRM Deployment Manager** main window, in the right pane, click **Configure Internet Facing Deployment**.

![Microsoft Dynamics CRM Deployment Manager](image)

(The screen image above is from Microsoft® software. Trademarks are the property of their respective owners.)
2. On the **Internet-Facing Deployment Configuration Wizard** window, click **Next**.

   (The screen image above is from Microsoft® software. Trademarks are the property of their respective owners.)
3. Complete the following fields, and then click **Next**.

<table>
<thead>
<tr>
<th><strong>Web Application Server Domain</strong></th>
<th>Enter <code>&lt;Domain name of the Dynamics CRM server&gt;:&lt;SSL port bound to the Microsoft Dynamics CRM website&gt;</code> (for example, <code>safenetdemos.com:444</code>).</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Organization Web Service Domain</strong></td>
<td>Enter <code>&lt;Domain name of the Dynamics CRM server&gt;:&lt;SSL port bound to the Microsoft Dynamics CRM website&gt;</code> (for example, <code>safenetdemos.com:444</code>).</td>
</tr>
<tr>
<td><strong>Discovery Web Service Domain</strong></td>
<td>Enter <code>&lt;External DNS record for the Discovery Web Service Domain&gt;:&lt;SSL port bound to the Microsoft Dynamics CRM website&gt;</code> (for example, <code>dev.safenetdemos.com:444</code>).</td>
</tr>
</tbody>
</table>

![Configure Internet-Facing Deployment Configuration Wizard](image)

*(The screen image above is from Microsoft® software. Trademarks are the property of their respective owners.)*
4. In the **Enter the external domain where your Internet-facing servers are located** field, the URL `auth.<domain.name>` is displayed automatically. Add the SSL port bound to the Microsoft Dynamics CRM website (for example, `auth.<domain.name>:444`), and then click **Next**.

![Image of Configure Internet-Facing Deployment](image)

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

5. Review the results, fix problems if required, and then click **Next**.

![Image of Internet-Facing Deployment Configuration Wizard](image)

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

![Image of Internet-Facing Deployment Configuration Wizard](image)

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

7. Click the **View the log file** link, scroll to the bottom of the file and copy the **Federation metadata URL**. This URL will be used in “Configuring AD FS Relying Party Trust for the Internet Facing Deployment” on page 46. Then, click **Finish**.

![Image of finish wizard](image)

(The screen image above is from Microsoft® software. Trademarks are the property of their respective owners.)
Configuring a Wildcard Certificate for READ Permission

The wildcard certificate provided for authentication should be trusted by the computer where you are installing Microsoft Dynamics CRM 2015. Hence, the **CRMAppPool** account of each Microsoft Dynamics CRM Web application must have READ permission to the private key of the encryption certificate.

1. On the Microsoft Dynamics CRM server, open **Microsoft Management Console** (MMC).
2. On the console, click **File > Add/Remove Snap-in**.

![Microsoft Management Console](image1)

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

3. On the **Add or Remove Snap-ins** window, in the **Available snap-ins** box, select **Certificates** and then click **Add**.

![Add or Remove Snap-ins](image2)

*(The screen image above is from Microsoft® software. Trademarks are the property of their respective owners.)*
4. On the **Certificates snap-in** window, select **Computer account**, and then click **Next**.

![Certificates snap-in window](image)

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

5. Click **Finish**.

![Select Computer window](image)

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

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

7. On the console, in the left pane, click **Console Root > Certificates > Personal > Certificates**.

(The screen image above is from Microsoft® software. Trademarks are the property of their respective owners.)
8. In the middle pane, right-click the wildcard certificate (for example, *.safenetdemos.com), and then click All Tasks > Manage Private Keys.

![Certificates](image1.png)

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

9. Click Add.

![Permissions](image2.png)

(The screen image above is from Microsoft® software. Trademarks are the property of their respective owners.)
10. On the **Select Users, Computers, Service Accounts, or Groups** window, under the **Enter the object names to select** box, enter the name of the CRMApPool user (for example, **testuser1**), click **Check Names**, and then click **OK**.

11. On the **Security** tab, perform the following steps:
   
   a. Under **Group or user names**, select the newly added user (for example, **testuser1**).
   
   b. Under **Permissions for testuser1**, in the **Allow** column, select the box for the **Full Control** and **Read** permissions.
   
   c. Click **OK**.
12. Repeat step 9.

13. On the Select Users, Computers, Service Accounts, or Groups window, under the Enter the object names to select box, enter NETWORK SERVICE, click Check Names, and then click OK.

14. On the Security tab, perform the following steps:
   a. Under Group or user names, select the newly added computer (for example, NETWORK SERVICE).
   b. Under Permissions for NETWORK SERVICE, in the Allow column, select the box for the Full Control and Read permissions.
   c. Click OK.
Configuring AD FS Relying Party Trust for the Internet Facing Deployment

Configure Microsoft Dynamics CRM Server 2015 as a relying party to consume claims from AD FS 3.0 for authenticating Internet access. With CRM configured for Internet-Facing Deployment, your remote/off-site/mobile users will be able to connect to the CRM system with a web client without a VPN.

1. From the Start menu, open AD FS Deployment Manager.
2. In the left pane, expand AD FS > Trust Relationships. Then, right-click Relying Party Trusts and select Add Relying Party Trusts.

![Relying Party Trusts](image)

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

3. On the Welcome window, click Start.

![Add Relying Party Trust Wizard](image)

(The screen image above is from Microsoft® software. Trademarks are the property of their respective owners.)
4. On the **Select Data Source** window, perform the following steps:
   a. Select **Import data about the relying party published online or on a local network**.
   b. In the **Federation metadata address** field, enter the metadata URL to locate the federation metadata.xml file.
      
      This is the URL you copied earlier from the log file in “Configuring Internet Facing Deployment on the CRM Server” on page 35.
   c. Click **Next**.

(The screen image above is from Microsoft® software. Trademarks are the property of their respective owners.)
5. On the Specify Display Name window, in the Display Name field, a name is displayed automatically. Click Next.


(The screen image above is from Microsoft® software. Trademarks are the property of their respective owners.)
7. On the **Choose Issuance Authorization Rules** window, select **Permit all users to access this relying party**, and then click **Next**.

8. On the **Ready to Add Trust** window, click **Next**.
9. On the **Finish** window, click **Close**.

![Add Relying Party Trust Wizard](image1)

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

10. On the **Edit Claim Rules for auth.safenetdemos.com** window, click **Add Rule**.

![Edit Claim Rules for auth.safenetdemos.com](image2)

*(The screen image above is from Microsoft® software. Trademarks are the property of their respective owners.)*
11. On the **Select Rule Template** window, in the **Claim rule template** field, select **Pass Through or Filter an Incoming Claim**, and then click **Next**.

![Select Rule Template](image1)

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

12. On the **Configure Rule** window, complete the following fields, and then click **Finish**:

<table>
<thead>
<tr>
<th>Claim Rule Name</th>
<th>Enter a name for the claim rule (for example, <strong>Pass Through UPN</strong>).</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incoming Claim Type</td>
<td>Select <strong>UPN</strong>.</td>
</tr>
</tbody>
</table>

![Configure Rule](image2)

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

14. On the Select Rule Template window, in the Claim rule template field, select Pass Through or Filter an Incoming Claim, and then click Next.
15. On the **Configure Rule** window, complete the following fields, and then click **Finish**:

<table>
<thead>
<tr>
<th>Claim rule name</th>
<th>Enter a name for the claim rule (for example, <strong>Pass Through Primary SID</strong>).</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incoming claim type</td>
<td>Select <strong>Primary SID</strong>.</td>
</tr>
</tbody>
</table>

![Configure Rule Window](image1)

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

16. On the **Edit Claim Rules for auth.safenetdemos.com** window, click **Add Rule**.

![Edit Claim Rules Window](image2)

*(The screen image above is from Microsoft® software. Trademarks are the property of their respective owners.)*
17. On the **Select Rule Template** window, in the **Claim rule template** field, select **Transform an Incoming Claim**, and then click **Next**.

![Select Rule Template](image1)

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

18. On the **Configure Rule** window, complete the following fields, and then click **Finish**:

<table>
<thead>
<tr>
<th>Claim rule name</th>
<th>Enter a name for the claim rule (for example, <strong>Transform Windows Account Name to Name</strong>).</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incoming claim type</td>
<td>Select <strong>Windows Account Name</strong>.</td>
</tr>
<tr>
<td>Outgoing claim type</td>
<td>Select <strong>Name</strong>.</td>
</tr>
</tbody>
</table>

![Configure Rule](image2)

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

(The screen image above is from Microsoft® software. Trademarks are the property of their respective owners.)
Configuring Gemalto SAS Agent for AD FS

1. Run the Gemalto SAS Agent for AD FS.
2. On the **Policy** tab, ensure that the following are selected:
   - Enable agent
   - Manual Challenge
   - Pre-generate Challenge

3. On the **Communications** tab, in the **Primary Server IP** box, type the SAS server IP address or name (and port if non-causal is used). Also, make sure that **Strip realm from UPN** is selected.

   In case your SAS server is not installed on same machine as the AD and AD FS, key encryption file needs to be loaded (as explained in Configuring SAS Auth Node and Encryption Key, page 64).
4. Click **Apply**. Enabling the agent registers the SafeNet MFA (multi-factor authentication) adapter with AD FS and enables it at a global policy level.

5. You can verify your settings by testing authentication from the agent to the authentication server. To do so, under **Authentication Test**, enter your user name and passcode, and then click **Test**. The result of the test will be displayed on the right side of the box.

6. Click **OK** when finished.

### Configuring AD FS Authentication Policy

1. On the **AD FS Management Console**, in the left pane, under **AD FS**, select **Authentication Policies**. Then, in the right pane, click **Edit Global Primary Authentication**.

2. On the **Edit Global Authentication Policy** window, on the **Primary** tab, verify that **Forms Authentication** is selected for both **Extranet** and **Intranet**.

(The screen image above is from Microsoft® software. Trademarks are the property of their respective owners.)
3. Click the **Multi-factor** tab, and then perform the following steps:
   a. Under **Users/Groups**, add the users and/or groups for which MFA will be required.
   b. Select **Extranet** and/or **Intranet**, according to your preferred configuration.
   c. Ensure that **SafeNet Multi Factor Authentication (SMFA)** is selected as an additional authentication method.
   d. Click **OK**.

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

Web Application Proxy (WAP) is a role service of the Remote Access server role in Windows Server 2012 R2. WAP provides reverse proxy functionality for web applications inside your corporate network to allow users on any device to access your web applications from outside the corporate network. WAP pre-authenticates access to web applications by using Active Directory Federation Services (AD FS), and also functions as an AD FS proxy.

1. Open **Remote Access Management Console**.
2. On the right pane, click **Publish**.
3. On the **Welcome** window, click **Next**.
4. On the **Preauthentication** window, select **Pass-through**, and then click **Next**.

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

5. On the **Publishing Settings** window, complete the following fields, and then click **Next**:

<table>
<thead>
<tr>
<th>Field</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Name</strong></td>
<td>Enter a name of your choice (for example, <strong>Domain ORG URL</strong>).</td>
</tr>
<tr>
<td><strong>External URL</strong></td>
<td>Enter <code>&lt;Organizational URL used to access Dynamics CRM&gt;:&lt;SSL port bound to the Microsoft Dynamics CRM website&gt;</code> (for example, <code>https://&lt;.org1.safenetdemos.com&gt;:444</code>).</td>
</tr>
<tr>
<td><strong>External Certificate</strong></td>
<td>Select the wildcard domain certificate (for example, <code>*.safenetdemos.com</code>).</td>
</tr>
</tbody>
</table>

(The screen image above is from Microsoft® software. Trademarks are the property of their respective owners.)
6. Repeat steps 1 to 5 to publish the following so that WAP is able to translate internal URLs to external URLs. Also, make sure your external DNS records for each of these URLs points to the WAP server now.

- External Org URL
- Auth URL
- Dev URL
- ADFS URL

![Remote Access Management Console](image)

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

**Disabling URL Translation**

Disable URL translation because WAP will re-scope the cookies as part of the URL translation, and CRM leverages a domain cookie that can be shared across sub-domains. If URL translation is not disabled, access to CRM will be prevented. Disabling URL translation will allow the WAP role to pass the cookie along that CRM is expecting.

1. From the **Start** menu, open **Windows PowerShell** as an administrator.

![Windows PowerShell](image)

(The screen image above is from Microsoft® software. Trademarks are the property of their respective owners.)
2. Run the following command to get the ID of each of the CRM published URLs you have added:

Get-WebApplicationProxyApplication | Format-List

3. Copy all the IDs listed. For example, copy the ID that is marked in yellow in the image above.

4. Run the following command one-by-one after replacing GUID with the IDs you copied in the previous step:

Set-WebApplicationProxyApplication -ID <GUID> -DisableTranslateUrlInResponseHeaders

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

The deployment of multi-factor authentication using SAS with Microsoft Dynamics CRM using SAML authentication requires:

- Creating User Stores in SafeNet Authentication Service, page 63
- Assigning an Authenticator in SafeNet Authentication Service, page 63
- Configuring SAS Auth Node and Encryption Key, page 64

Creating User Stores in SafeNet Authentication Service

Before SAS can authenticate any user in your organization, you need to create a user store in SAS that reflects the users that would need to use multi-factor authentication. User records are created in the SAS user store using one of the following methods:

- Manually, one user at a time, using the Create User shortcut
- Manually, by importing one or more user records via a flat file
- Automatically, by synchronizing with your Active Directory / LDAP server using the SAS Synchronization Agent

For additional details on importing users to SafeNet Authentication Service, refer to “Creating Users” in the SafeNet Authentication Service Subscriber Account Operator Guide:


All SafeNet Authentication Service documentation can be found on the SafeNet Knowledge Base site.

Assigning an Authenticator in SafeNet Authentication Service

SAS supports a number of authentication methods that can be used as a second authentication factor for users who are authenticating through Microsoft Dynamics CRM.

The following authenticators are supported:

- MobilePASS

Authenticators can be assigned to users in two ways:

- Manual provisioning—Assign an authenticator to users one at a time.
- Provisioning rules—The administrator can set provisioning rules in SAS so that the rules will be triggered when group memberships and other user attributes change. An authenticator will be assigned automatically to the user.

Refer to “Provisioning Rules” in the SafeNet Authentication Service Subscriber Account Operator Guide to learn how to provision the different authentication methods to the users in the SAS user store.

Configuring SAS Auth Node and Encryption Key

In the event that the SAS server is not installed on the same machine as AD and AD FS, the following steps must be performed:

1. Log in to the SAS console as the account operator.
2. Click Virtual Servers > COMMS > Authentication Processing.
3. Click the Authentication Agent Settings link, and then click Download to download the encryption key file. This file will be needed in step 4 of “Configuring Gemalto SAS Agent for AD FS”, page 56.

4. Click Virtual Servers > COMMS > Auth Nodes.
5. Click the **Auth Nodes** link and select **Add**. Complete the **Auth Notes** tab as follows:

<table>
<thead>
<tr>
<th><strong>Agent Description</strong></th>
<th>Type a description for this node.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Host Name</strong></td>
<td>Type a host name.</td>
</tr>
<tr>
<td><strong>Low IP Address In Range</strong></td>
<td>Type the low IP address.</td>
</tr>
<tr>
<td><strong>High IP Address In Range</strong></td>
<td>Type the high IP address. (The low and high IP addresses may be the same since the node is referencing a single machine.)</td>
</tr>
<tr>
<td><strong>Exclude from PIN change requests</strong></td>
<td>Do not select this check box.</td>
</tr>
</tbody>
</table>

Repeat steps 4 to 5 twice to add two Auth Nodes incorporating two server’s IPs as mentioned below:

- AD FS Server—Gemalto SAS Agent communication with SAS
- WAP Server—Publish the internal URLs to communicate to the outside world with URL translation by WAP
**Running the Solution**

For this integration, SafeNet eToken PASS is configured for authentication with the SAS solution.

1. Browse to your Microsoft Dynamics CRM Server website’s external address (for example, https://org1.safenetdemos.com:444).

2. You are redirected to the AD FS login page. Under **Sign in with your organizational account**, enter the Active Directory **Username** and **Password**, and then click **Sign in**.

3. After your credentials are authenticated by your organization’s AD FS, you are redirected to SAS to enter your one-time password (OTP). Generate an OTP using SafeNet eToken PASS, enter it in the OTP field, and then click **Submit**.
After successful authentication, you can access the Microsoft Dynamics CRM dashboard.

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

<table>
<thead>
<tr>
<th>Contact Method</th>
<th>Contact Information</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Address</strong></td>
<td>Gemalto, Inc.</td>
</tr>
<tr>
<td></td>
<td>4690 Millennium Drive</td>
</tr>
<tr>
<td></td>
<td>Belcamp, Maryland 21017 USA</td>
</tr>
<tr>
<td><strong>Phone</strong></td>
<td>United States</td>
</tr>
<tr>
<td></td>
<td>1-800-545-6608</td>
</tr>
<tr>
<td></td>
<td>International</td>
</tr>
<tr>
<td></td>
<td>1-410-931-7520</td>
</tr>
<tr>
<td><strong>Technical Support</strong></td>
<td><a href="https://serviceportal.safenet-inc.com">https://serviceportal.safenet-inc.com</a></td>
</tr>
<tr>
<td><strong>Customer Portal</strong></td>
<td>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.</td>
</tr>
</tbody>
</table>