SafeNet Authentication Service
Integration Guide

Using SafeNet Authentication Service as an Identity Provider for Tableau Server
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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 Tableau Server.

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.

Tableau Server is an enterprise-class data governance platform that offers powerful mobile and browser-based analytics. Administrators can define data sources, add metadata, and author new calculations and data fields for users to securely access.

This document describes how to:

- Configure SAML authentication in Tableau Server using SafeNet Authentication Service as an identity provider.

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

Tableau Server 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**—SafeNet’s cloud-based authentication service
- **Tableau Server**—Version 8.3
Audience

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

SAML Authentication using SafeNet Authentication Service Cloud

SafeNet Authentication Service (SAS) Cloud provides a service for SAML authentication that is already implemented in the SAS Cloud environment and can be used without any installation.

SAML Authentication using SafeNet Authentication Service-SPE and SafeNet Authentication Service-PCE

In addition to the pure cloud-based offering, SafeNet Authentication Service (SAS) 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 the Shibboleth infrastructure, which uses a special on-premises agent called SafeNet Authentication Service Agent for Shibboleth.

For more information on how to install and configure the SafeNet Authentication Service Agent for Shibboleth, refer to the SafeNet Support Portal.

SAML Authentication Flow using SafeNet Authentication Service

SafeNet Authentication Service (SAS) communicates with a large number of service providers and cloud-based services solutions using the SAML protocol.

The image below describes the dataflow of a multi-factor authentication transaction for Tableau Server.
1. A user attempts to log on to Tableau Server. The user is redirected to SafeNet Authentication Service. SAS collects and evaluates the user’s credentials.

2. SAS returns a response to Tableau Server, accepting or rejecting the user’s authentication request.

**SAML Prerequisites**

To enable SafeNet Authentication Service to receive SAML authentication requests from Tableau Server, ensure the following:

1. The end users can authenticate through the Tableau Server environment with a static password.
2. A PEM-encoded X.509 certificate with a .crt file extension should be available. This file is used by Tableau Server, not the identity provider.
3. An RSA or DSA private key file that is not password protected, and has a .key file extension, should be available. This file is used by Tableau Server, not the identity provider.

**NOTE:** If you are using a PEM-encoded X.509 certificate file for SSL, you can use the same file for SAML. When it’s used for SSL, the certificate file is used to encrypt traffic. When it’s used for SAML, the certificate is used for authentication. Tableau Server does not support certificate and certificate key files for SAML if the certificate and certificate key require a chain file. If your SSL certificate and certificate key file require a chain file, you need to generate a new certificate and key file to use for SAML.
Configuring Tableau Server

To add SafeNet Authentication Service as an identity provider in Tableau Server:

- Download the SAS Metadata, page 7
- Configure Tableau Server for SAML Authentication, page 7

Download the SAS Metadata

1. Browse to the https://idp1.cryptocard.com/idp/shibboleth URL.
2. The SAS metadata will automatically download. Save it locally on your machine.

Configure Tableau Server for SAML Authentication

4. Log in on the machine where Tableau Server is installed.
5. From the Windows Start menu, click All Programs > Tableau Server 8.3 > Stop Tableau Server.
6. Wait until the Tableau Server has completely stopped, and then click Start > All Programs > Tableau Server 8.3 > Configure Tableau Server.

![Tableau Server Configuration](image)

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

7. On the General tab, enter the Tableau Server’s administrator password in the Password field.
8. Click the SAML tab.
9. Click the **Use SAML for single sign-on** check box, and then complete the following fields:

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
</table>
| **Tableau Server return URL**  | Enter the Tableau Server URL (for example, http://<DNS or IP of Tableau Server>). Do not end the URL with '/'.
| **SAML entity ID**             | Enter the entity ID of Tableau Server (for example, Tableau).                |
| **SAML certificate file**      | Click ... adjacent to the field, and then select the SAML certificate. It should be a PEM-encoded X.509 certificate with a .crt file extension. |
| **SAML key file**              | Click ... button adjacent to the field, and then select the certificate key file. It should be an RSA or DSA private key file that is not password-protected, and has a .key file extension. |
| **SAML Idp metadata file**     | Click ... adjacent to the field, and then select the SAS metadata file. The SAS metadata must be downloaded in order to select the file here. If you have not already downloaded the SAS metadata, please refer to “Download the SAS Metadata.” |

10. Click **Export Metadata File**, and save the Tableau Server metadata locally. The metadata will be required later to configure SAS (see “Adding Tableau Server as a Service Provider in SAS”).

11. Click **OK**. It will take some time to save the settings.

12. When the settings have been saved, click **OK** again.

(The screen image above is from Tableau Software®. Trademarks are the property of their respective owners.)
13. Open a command prompt window, and then browse to C:\Program Files\Tableau\Tableau Server\8.3\bin.

14. Type the following command, and then press Enter:
   
   ```
   ```

15. Type the following command, and then press Enter:
   
   ```
   tabadmin restart
   ```

---

### Configuring SafeNet Authentication Service

The deployment of multi-factor authentication using SafeNet Authentication Service (SAS) with Tableau Server using SAML authentication requires:

- Synchronizing Users Stores to SafeNet Authentication Service, page 9
- Assigning an Authenticator in SafeNet Authentication Service, page 9
- Adding Tableau Server as a Service Provider (SP) in SafeNet Authentication Service, page 10
- Enabling SAML Services in SafeNet Authentication Service, page 13

### Synchronizing Users Stores to SafeNet Authentication Service

Before SafeNet Authentication Service (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 further 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

SafeNet Authentication Service (SAS) supports a number of authentication methods that can be used as a second authentication factor for users authenticating through Tableau Server.

The following authenticators are supported:

- eToken PASS
- RB-1 keypad token
- KT-4 token
- SafeNet GOLD
- SMS tokens
- MP-1 software token
- Gridsure
- 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” 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.


### Adding Tableau Server as a Service Provider (SP) in SafeNet Authentication Service

Add a service provider entry in the SAS **SAML Service Providers** module to prepare it to receive SAML authentication requests from Tableau Server. (You will need the Tableau Server metadata that you exported in step 7 in "Configure Tableau Server for SAML Authentication."

**To add Tableau Server as a Service Provider in** SafeNet Authentication Service:

1. Log in to the SafeNet Authentication Service console with an Operator account.
2. Click the **COMMS** tab, and then click **SAML Service Providers**.

![Image of COMMS tab with SAML Service Providers highlighted]

3. In the **SAML Service Providers** module, click the **SAML 2.0 Settings** link.

![Image of SAML Service Providers settings]

4. Click **Add**.

![Image of SAML 2.0 Settings with Add button highlighted]
5. Under **Add SAML 2.0 Settings**, complete the following fields:

<table>
<thead>
<tr>
<th>Friendly Name</th>
<th>Enter the Tableau Server name.</th>
</tr>
</thead>
</table>
| SAML 2.0 Metadata | **a.** Select **Upload Existing Metadata File**.  

**b.** Click **Choose File**, and then browse to and select the Tableau Server metadata that you exported in step 7 in “Configure Tableau Server for SAML Authentication.”  

Click **Open**.

![Add SAML 2.0 Settings](image)

**Under Return Attributes**, add the following attributes, and then click **Apply**:

<table>
<thead>
<tr>
<th>Name</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><a href="http://schemas.xmlsoap.org/ws/2005/05/identity/claims/emailaddress">http://schemas.xmlsoap.org/ws/2005/05/identity/claims/emailaddress</a></td>
<td>According to ThirdParty Product Requirements</td>
</tr>
<tr>
<td><a href="http://schemas.xmlsoap.org/claims/EmailAddress">http://schemas.xmlsoap.org/claims/EmailAddress</a></td>
<td>According to ThirdParty Product Requirements</td>
</tr>
<tr>
<td><a href="http://schemas.xmlsoap.org/ws/2005/05/identity/claims/name">http://schemas.xmlsoap.org/ws/2005/05/identity/claims/name</a></td>
<td>According to ThirdParty Product Requirements</td>
</tr>
<tr>
<td><a href="http://schemas.xmlsoap.org/ws/2005/05/identity/claims/givenname">http://schemas.xmlsoap.org/ws/2005/05/identity/claims/givenname</a></td>
<td>According to ThirdParty Product Requirements</td>
</tr>
<tr>
<td><a href="http://schemas.xmlsoap.org/claims/CommonName">http://schemas.xmlsoap.org/claims/CommonName</a></td>
<td>According to ThirdParty Product Requirements</td>
</tr>
<tr>
<td><a href="http://schemas.xmlsoap.org/ws/2005/05/identity/claims/nameidentifier">http://schemas.xmlsoap.org/ws/2005/05/identity/claims/nameidentifier</a></td>
<td>According to ThirdParty Product Requirements</td>
</tr>
</tbody>
</table>

| principal | According to ThirdParty Product Requirements |
Tableau Server is added as a service provider in the system.

Enabling SAML Services in SafeNet Authentication Service

After Tableau Server has been added to SafeNet Authentication Service (SAS) as a service provider, the users should be granted permission to use this service provider with SAML authentication.

There are two methods to enable the user to use the service provider:

- Manually, one user at a time, using SAML Services module
- Automatically, by defining groups of users, using SAML Provisioning Rules
Using the SAML Services Module

Manually enable a single user to authenticate against one or more configured SAML Service providers.

1. Log in to the SafeNet Authentication Service console with an Operator account.

2. Click the **ASSIGNMENT** tab, and then search for the required user.

3. Click the appropriate user in the **User ID** column.
4. Click **SAML Services**.

5. Click **Add**.

6. Under **Add SAML Service**, do the following:
   a. From the **Service** menu, select the Tableau Server service provider.
   b. In **SAML Login ID** field, select the type of login ID (User ID, E-mail, or Custom) to be sent as a UserID to Tableau Server in the response.
   c. Click **Add**.
The user can now authenticate to Tableau Server using SAML authentication.

Using SAML Provisioning Rules

Use this module to enable groups of users to authenticate to SAML service providers.

1. Log in to the SafeNet Authentication Service console with an Operator account.

2. Click the POLICY tab, and then click Automation Policies.
3. Click the **SAML Provisioning Rules** link.

4. Click **New Rule**.

5. Configure the following fields, and then click **Add**:

<table>
<thead>
<tr>
<th>Rule Name</th>
<th>Enter a name for the rule.</th>
</tr>
</thead>
<tbody>
<tr>
<td>User is in container</td>
<td>Users affected by this rule must be in the selected container.</td>
</tr>
<tr>
<td>Groups</td>
<td>The <strong>Virtual Server groups</strong> box lists all groups. Click the user groups that will be affected by the rule, and then click the right arrow to move it to the <strong>Used by rule</strong> box.</td>
</tr>
<tr>
<td>Parties</td>
<td>The <strong>Relying Parties</strong> box lists all service providers. Click the service providers that the groups of users will authenticate to, and then click the right arrow to move it to <strong>Rule Parties</strong> box.</td>
</tr>
<tr>
<td>SAML Login ID</td>
<td>Select <strong>User ID</strong>. The User ID will be returned to the service provider in the SAML assertion.</td>
</tr>
</tbody>
</table>
### SAML Provisioning Rules

**Add SAML Auto-create Rule**

<table>
<thead>
<tr>
<th>Rule Name</th>
<th>User is in container: Default</th>
</tr>
</thead>
</table>

**Groups Filter:**

- **Groups:**
  - Virtual Server groups:
  - Used by rule:

- **Parties:**
  - Relying Parties:
    - Tableau
  - Rule Parties:

**SAML Login ID:**

- User ID
- E-mail
Running the Solution

Check the configured solution after successfully configuring the Tableau Server for SAML authentication.

In the following solution, the user is enrolled with a MobilePASS token.

1. Open the web browser and enter the URL of Tableau Server. (For example, http://<IP or DNS of Tableau Server>.)
2. The user is redirected to the SAS Login page. Enter the username in User Name field, generate a one-time password, and then enter it in Password field.

3. Click Login. If the credentials are valid, the user will be redirected to the Tableau Server portal.

(The screen image above is from Tableau 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>Address</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>Phone</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>Technical Support</td>
<td><a href="https://serviceportal.safenet-inc.com">https://serviceportal.safenet-inc.com</a></td>
</tr>
<tr>
<td>Customer Portal</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>